# PURCHASING

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NOVEMBER, 1952

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# PURCHASING

*The National Magazine of Industrial Purchasing*

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# PURCHASING PREVIEWS

*A WASHINGTON REPORT FOR PURCHASING AGENTS*

November 1, 1952.

**MATERIALS TO BE IN GOOD SUPPLY**

Volume of military production will continue to increase through the middle of next year, and the military budget will be substantially larger.

Significant factor is that the expansion of productive facilities will have reached a level sufficient to take care of the military requirements, and to provide all the materials for a highly competitive civilian economy.

It is now purely a question of timing as to the lifting of controls. There are two factors which tend to impede the speed with which material and production controls can be scrapped.

First is an earnest consideration of the need for some standby mechanism of control which could be made quickly effective in the event of a major war. The second is the bureaucratic malady of prolonging a Governmental function to preserve power and jobs.

**HIGH LEVEL PRODUCTION IN PROSPECT**

Forecast for next year, irrespective of political decisions, is for a high level of production for both military and civilian consumption. There will be some shifts. It will be a period of testing markets for the product of the new and expanded facilities.

Basic question which will be determined is whether the new capacity added under the expansion program will be operated at full tilt along with the older facilities, or whether there will be a substantial scrapping of other capacity already in existence.

If the new metals production facilities are operated as replacement for older and less efficient mills and furnaces, it will mean a very real shift in the industrial pattern.

The Government policy in regard to keeping facilities in operation is that while it is obvious that only demand can determine to what extent the nation's total facilities can be kept operating, the Government is concerned with keeping the full capacity in productive readiness.

Otherwise the huge plant expansion program, with billions of dollars of plant capacity allowed to be depreciated tax-wise on an accelerated basis, will have merely been a Government-sponsored plant modernization program.

**HIGH COST PRODUCTION ALSO EXPANDED**

Biggest expansion has been in steel and aluminum productive capacity, in added power output, transportation facilities, chemicals output, and petroleum and petroleum products output.

Of major interest to purchasing agents is the fact that while much of the expanded capacity represents low cost production, with newer methods and newer equipment, there has also been expansion in high cost production.

Government agreements and guarantees have been made to encourage high cost production of nickel, cobalt, copper, tungsten, columbium and tantalum. Government purchase contracts have been made, and accelerated amortization provisions have been advanced to encourage production of titanium.

**COSTS AND PRICES TO BE HIGHER**

The blending of lower cost facilities with the factors which will mean higher costs of materials will tend to balance each other out. Outlook for the year ahead is for a continued increase in costs and in price levels.

These increases will be predicated not so much on machine and material costs as the higher wage rates. The action in steel established a national wage pattern, which was later confirmed in the wage and price actions in coal.

At the same time, there will be a continuing demand on the part of the consumer for lower prices. In a period of competitive selling—and the outlook is for very sharp competition, there will be an intense pressure on manufacturers to institute such

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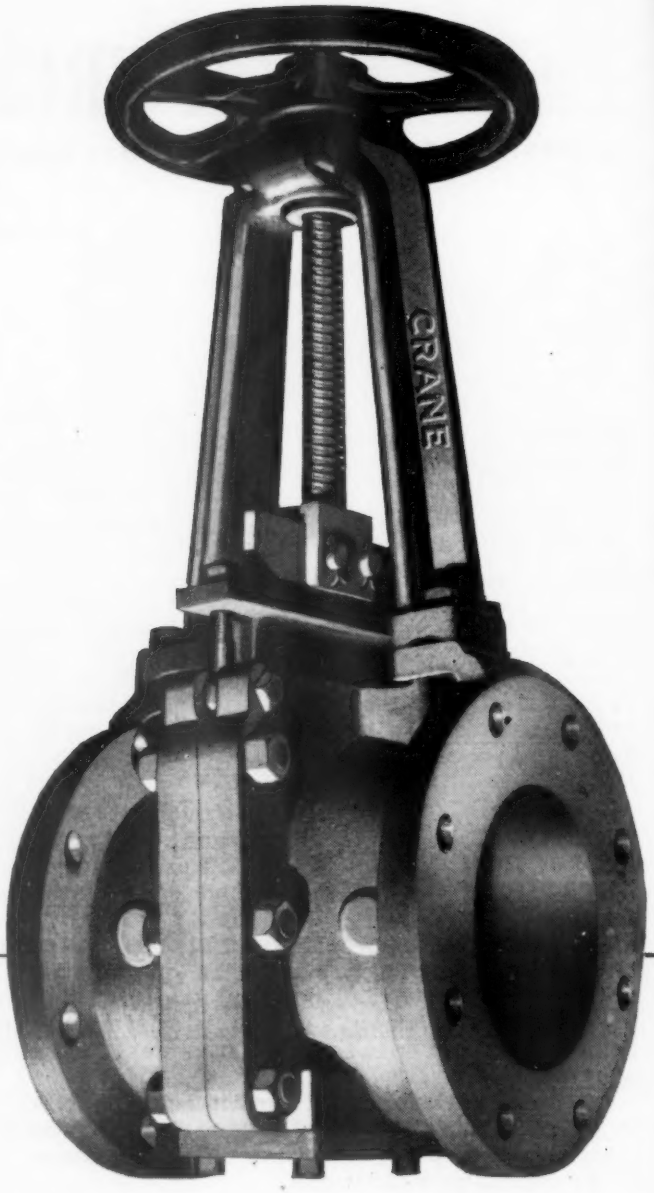
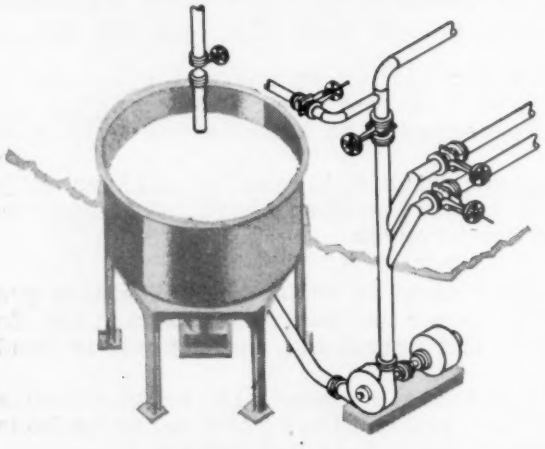



## Read these Facts of the Case!



***Where Installed:*** In a paper mill producing strong bag stock, on pulper outlet lines. Pulp here is of high consistency, normally about 6%. Continuous pulper operation is needed.

***Trouble Encountered:*** The pulp stock valves formerly used had a strong tendency toward clogging. This forced frequent shutdown of pulper for clean-out of valves and lines. It was costly in time, labor, and production loss.

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economies in production and distribution as can be made to offset the higher wage levels.

Such a trend accentuates the problems of the purchasing agent, who is forced to buy products, materials and components under conditions of higher cost at a time when the ultimate demand is for lower prices.

**CONTINUED NICKEL CONTROL AT ISSUE**

Government officials forecast that there will be continued areas of materials shortages. Nickel is the classical example. While the nickel supply and demand situation is not badly out of balance at the present time, Government control officials claim that any action to relax restrictions on the use of nickel for the next year would be extremely premature.

Reasoning behind this pessimistic forecast is that defense requirements will increase, and that the Government will expand its stockpiling program in nickel.

Industry spokesmen have taken the position that there is no need for waiting a year before relaxing restrictions on the use of nickel. Producers of nickel-bearing stainless report a substantial decrease in defense orders for nickel-bearing stainless, and one producer reported that his backlog is "less than good business".

Offsetting what may be a continuing shortage of nickel stainless is the fact that ferro-chromium is in balance with demand, and new facilities coming into production will increase the available supply.

**STEEL SHORTAGES TO BE OVERCOME**

Pinch in steel supplies—if any—is most likely to occur during the last six weeks of this year. The impact of the steel strike has not been as severe as expected, and by the first of the new year, supply problems in steel will have been overcome.

Only problems in steel supply that may continue into next year are in such items as seamless tubing, large bars and heavy structural steel.

By March of next year, when the expansion program in steel will have been largely completed, a monthly production of 10,000,000 tons should be reached.

**NPA EMPLOYMENT SHARPLY CUT**

Indication of the trend in Government control program is the number of persons employed by the National Production Authority. On July 4 of this year, NPA employed 4,156 persons; on September 26, the number was 3,330. This will be cut to 2,650 as of January 31 of next year, with a further reduction to 2,380 by mid-'53.

While this is the projected plan for contracting the controls agency, there is considerable pressure to hasten the liquidation process.

**CONTAINERS AND PACKAGING SUPPLY OUTLOOK**

National Production Authority report on outlook in supply of containers and packaging materials indicates that all types of containers will be readily available this fall and winter.

There may be some tightness in supply of metal cans for products other than perishable foods until requirements for perishable foods are fully met.

Highlights of the packaging and container report show the following: The supply of glass containers was more than adequate for needs. Based on a seven-day week, the glass container industry operated at a considerably lesser rate than 1951 levels.

Rate of use of collapsible tubes has been increasing, with largest increase in tubes for dentrifices; tubes for household and industrial uses increased substantially. Tubes for cosmetic and shaving creams dropped sharply, reflecting the increased use of plastic containers.

Fibre drum producers have been operating on a one-shift five-day-week basis at approximately 80% of capacity. Paper shipping sack production continued low, with indications that bag users were drawing heavily on their inventories. Bag users were reported buying on a "spot" replenishment basis. Demand for folding paper boxes has been similarly weak. Improvement is expected during the seasonal demand period in the fall.

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### Safety Shoes

1. Color reproductions and cutaway drawings of new styles of steel-toe safety shoes with air cushioned innersoles of foam latex feature new catalog issued by the Safety First Shoe Co. The company's regular line of "dress" and work shoes is also illustrated and described.

### Allspeed Motor Drives

2. Allspeed motor drives of from 1/3 to 7-1/2 hp are described in a 16-page bulletin published by the Worthington Corp. Upright and horizontal drives of either closed or skeleton type are described and pictured. Selection tables tell how to select the proper drive. Dimensions and line drawings on the various drives are featured.

### Portable Compressor

3. New advanced-design two-stage, rotary sliding vane compressor, the 105 Gyro-Flo, which does not employ pistons, rods and clutch, is subject of bulletin issued by Ingersoll-Rand Co. The new compressor weighs but 2630 pounds. Rotary action produces steady flow of compressed air without pulsation and without vibration.

### Liquid Agitators and Processing Vessels

4. Liquid agitators and processing vessels are the subject of 16-page brochure published by the Mixing Equipment Division of Struthers Wells Corp. Fundamentals of four types—propeller, open impeller, shrouded turbine and radial propeller are given. Section of brochure is devoted to mixing equipment for solids, semi-solids, pastes and liquids, and custom-made pressure vessels manufactured to standard design.

### Black Chemical-Resistant Paint

5. Acid and alkali-resisting paint named Chem-Rem, which can be used on metal, wood or masonry surfaces, indoors or out, is described in bulletin issued by Speco, Inc., 7308 Associate Ave. Applied by either brush or spray it dries to a hard glossy black finish.

### Materials Level Indicator

6. Bin-Vue is the name of a materials level indicator of simple design, described in bulletin issued by Convair. The device, which operates in any position, is powered by 1/200 hp 110v, 60 cycle motor. It is said to give sure, positive automatic indication at any part of bin.

### Liquid Chiller and Ice Builder

7. Bulletin describes the Brunner liquid chiller and ice builder made by the Brunner Manufacturing Co. BTU ranges from 60,000 to 763,000 once every 24 hours, and usable pounds of ice 347 to 4960, depending upon size of machine. Models ¼ through 7½ hp come complete with refrigeration unit mounted at the factory.

### Ball-Bearing Axle Load Scales

8. Heavy-duty axle load scales are the subject of bulletin issued by the Howe Scale Co. Construction features are discussed, and phantom view shows various details. Full page is devoted to scale, pit, cabinet and other specifications.

### Interlocking Wiring Devices

9. Interlocking wiring devices, and how the units eliminate accidental disconnects are illustrated and described in folder released by The Arrow-Hart & Hegeman Electric Co. Uninterrupted production, time saving and increased safety are among the advantages. Illustrations show typical applications where portable electric tools are used.

(*Please turn to page* 21)

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### Industrial Plant Heaters

10. Various models of industrial heaters, including color cutaway illustration of a direct-fired heating unit, are shown in new catalog No. NGC-10-52, issued by the Thermobloc Divn. of Prat-Daniel Corp. Specifications and dimensions of all models are listed.

### Industrial Wiping Materials

11. Swatches of various grades and types of wiping materials are included in booklet "The Why of Wipers" published by Wiping Materials, Inc., which explains the advantages accruing through the use of processed wipers.

### Electrical Switches, Snap Action

12. Heavy-duty precision limit switches, enclosed switches some of which are sealed against dust, dirt, splash of oil, water, etc., explosion-proof switches, switch-actuators, standard size basic switches, and ultra small switch designs are covered in catalog, published by Micro. In addition to complete information on each switch, catalog presents technical and application data.

### Comparative Chart of Pliers, Adjustable Wrenches

13. Comparative chart of pliers and adjustable wrenches issued by the Utica Drop Forge & Tool Corp., cross-refers and compares the numbers of 31 manufacturers of pliers and wrenches. Some 144 pliers and adjustable wrenches are listed, with brand names and tool numbers of similar items.

### Molded Cups for Pump Pistons, Etc.

14. Various types of molded cups, service data and a complete list of sizes and part numbers of molded cups for pump pistons, hydraulic service and pneumatic equipment are illustrated in bulletin issued by Garlock Packing Co. Typical applications are also shown.

### Industrial X-Ray Equipment

15. Seven types of X-ray equipment are described in folder, "Seven Industrial Eyes" released by Westinghouse Electric Corp. The units described are: 1) single-column tube stand unit; 2) industrial jib crane unit; 3) ultra high-speed radiograph unit; 4) mobile unit; 5) equipment for mass inspection of parts; 6) wall-mounted industrial X-ray unit; 7) thickness gage.

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### Complete Vacuum Processing Systems

16. Many types of vacuum equipment are described in catalog 730, revised edition "Complete Vacuum Processing Systems", released by the F. J. Stokes Machine Co. Included are rotary and rotating vacuum dryers, vacuum shelf dryers, freeze-drying equipment, impregnators, extraction and solvent recovery apparatus, and vacuum pumps.

### Flexible Couplings

17. Standard bore flexible couplings are the subject of bulletin CDC-52 issued by Cone-Drive Gears, Divn. of Michigan Tool Co. Tables list capacities, specifications and ordering information for flexible couplings in 22 standard bore sizes from ¾" to 6½", for application on Cone-Drive worm shafts, Cone-Drive gear shafts and electric motor shafts.

### Rotary Bins for Parts, Tools, Materials

18. Saving in floor space and other advantages of Rotabin rotary shelving for storing parts, tools and materials are described in 16-page catalog "The Science of Economical Shelf Storage", published by Frick-Gallagher Mfg. Co. Illustrations show various types of bins and shelving accessories.

### Abrasive Disc Guidebook

19. Contents of new 60-page book published by Gardner Machine Co., include abrasive fundamentals, selection information, types available, standard markings, spindle speeds, coolant selection, dressing, safety, grinding various materials and care of discs. Book is illustrated with pictures and sketches.

### Dow Corning 200 Silicone Fluid

20. Over 20 different properties, from boiling point to sound transmission, of Fluid 200, are thoroughly discussed and illustrated in Silicone Notebook, Ref. 2003, issued by Dow Corning Corp. Physically this is a bland clear oil which retains pretty much the same properties over a wide temperature range. It serves as a defoamer, a polish ingredient, a release agent, a dielectric, a damping medium and a paint additive. Industrial applications are pictured and described.

### Blue Book of Packaging

21. New edition of industrial strapping applications, entitled the "Blue Book of Packaging", has been published by Gerrard Steel Strapping Divn., U. S. Steel Co. There are 24 pages of photos of reinforced parcels, bundles, boxes, crates and carloading that run the gamut from parcel post and express to heavy freight and carload stowage. Palletization, and economy-wise self-palletized applications are shown. Strapping machines and auxiliary equipment are illustrated and described.

### Quick-Change Tool Holders

22. Quick-Change tool holders—adaptors, arbors, special tools, solid carbide inserted blade milling cutters, milling and boring machine accessories, and precision parts, are illustrated and described in Bulletin 5201 issued by the Beaver Tool & Engineering Corp. Page illustrates typical set of tools for general-purpose work on medium-duty milling machine.

### Flexible Metal Hose

23. Catalog of 32 pages, No. CMH 130, on all types of metal hose has just been released by the Flexonics Corp. It covers the full range of the company's manufacture in corrugated flexible metal hose, convoluted hose types, and stainless steel flexible metal hose; also covered are coupling types, special assemblies and installation information.

### Electric-Powered Industrial Trucks

24. Features of the Jacklift Electric and the Master Jackstacker truck

*(Continued on page 22)*

(*Continued from page 21*)

are set forth in 18-page illustrated catalog released by Lewis-Shepard. The catalog is fully illustrated with photos and engineering drawings and specifications, and maintenance features are fully explained.

### Material Flow Conveyors

25. Gravity conveyors of the wheel type, roller type, and special wheel type, and power conveyors for moving bags, cartons, crates, etc., interfloor, stacking, truck loading, car loading, etc., are illustrated in new bulletin issued by Rapids Standard Co., Inc. Table-Veyor and box car loader are also shown.

### Aluminum Bus Bars

26. The Practical Application of Aluminum Bus Bars is discussed in bulletin B-750, published by Bull-Dog Electric Products Co., which describes Bustribution duct with aluminum bus bars. Bulletin also contains chart comparing the relative size, weight and performance of aluminum and copper in the company's LO-X and Plug-In Bustribution duct. The Bustribution duct weighs as much as 41% less than a comparable size in copper.

### Cutting Gear Teeth on Milling Machine

27. Revised and enlarged publication of its booklet "Cutting Gear Teeth on a Milling Machine", rewritten to conform to the latest practice, is announced by the Cincinnati Milling Machine Co. Instructions cover the cutting of worms and worm-wheels, and spur, helical and bevel gear teeth.

### Booklet on Diamond Finishing

28. Basic information on the characteristics of diamond as an abrasive, features booklet published by the Abrasives Division of the Elgin National Watch Company. It also gives complete catalog data on diamond abrasive Dymo and the Dymo finishing accessory line. Outstanding feature of the booklet is illustration and detailed explanation of primary applications of diamond for finishing—drawing die polishing, plastic mold finishing, cutting tool edge finishing and mass production polishing of components.

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### Industrial Insulation Products

29. Insulating materials covering the complete temperature range from -150° to 1800°F, are the subject of new catalog issued by the Baldwin-Hill Co. Insulating cement, block, blanket, felt, and pipe covering are a few of the products shown. Catalog gives information on typical uses, sizes, packaging and densities.

### Self-Adhering Pipe Markers

30. Use of pressure-sensitive self-adhering printed identification for cable, conduit, and pipe, is described in a folder issued by Westline Products Divn., Western Litho-Graph Co.

### Spacer Fasteners Eliminate Blind Attachments

31. Prestole fasteners for spacer assemblies are described in catalog bulletin No. 215-A-5M, which gives application and engineering data that simplifies selection of spacers. Blind attachments are eliminated and handling of parts and pieces minimized. Prestole Corp.

### Increased Heat Treating Efficiency

32. Seventeen ways in which the submerged electrode salt bath furnace can increase metal heat treating efficiency on 10 specific heat treating applications in the temperature range from 1100°F to 2400°F are described in new bulletin available from Ajax Electric Co., Inc.

### Trailer Hoists and Bodies

33. Cam and roller and telescopic hoists and the advantages offered by both, are discussed in bulletin W-105 describing trailer hoists and bodies, issued by Gar Wood Industries, Inc. The largest hoist, telescopic. TV35 handles 30-ton payload; F8C cam and roller hoist handles 15 tons on 16′ body, and Model F77C cam and roller has maximum payload of 25-ton on an 18′ body. The trailer bodies are designed to these hoists.

### Carbide Tools

34. New catalog issued by Kennametal Inc., gives a complete picture of the variety and range of sizes of carbide tools currently available. In addition to industry standard brazed tools it lists blanks, new "top-clamp" Kennamatic tools, Kendex tools, Kennamills and various specialties.

### Heavy-Duty Vises

35. Plain and swivel type heavy duty 6″ vises are the subject of bulletin issued by Producto Machine Co., which gives technical details on three models: plain vise with ground sides, plain vise with clamping ears, and swivel vise complete with graduated base.

### Zinc and Aluminum Die Castings

36. Small die casting service and facilities of the Small Castings Department of the Dollin Corp., are explained in bulletin, which also illustrates numerous small die-castings made by the department.

### Are You Buying Dies?

37. If so you will be interested in booklet issued by the B. Jahn Manufacturing Co., describing the company's facilities and services, and which also presents dozens of actual die strip photographs.

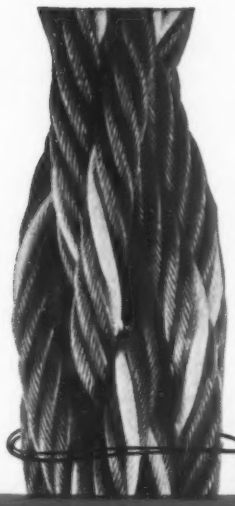
### Gas Protective Instruments

38. Four types of combustible gas protective instruments are catalogued in Form FSE-1251 published by Johnson-Williams, Ltd. These include portable indicator into which suspected vapor is drawn, portable audible alarm for continuous guard against appearance of combustible gas, and two types of combustible gas alarm for fixed locations.

### Electrical Contact Rivets

39. Contact rivets made from fine silver, coin silver, silver alloys, palladium, and powdered metal composition are discussed in Catalog C-521 released by Gibson Electric Co. Standard sizes of flat, crowned and pointed contact rivets are listed.

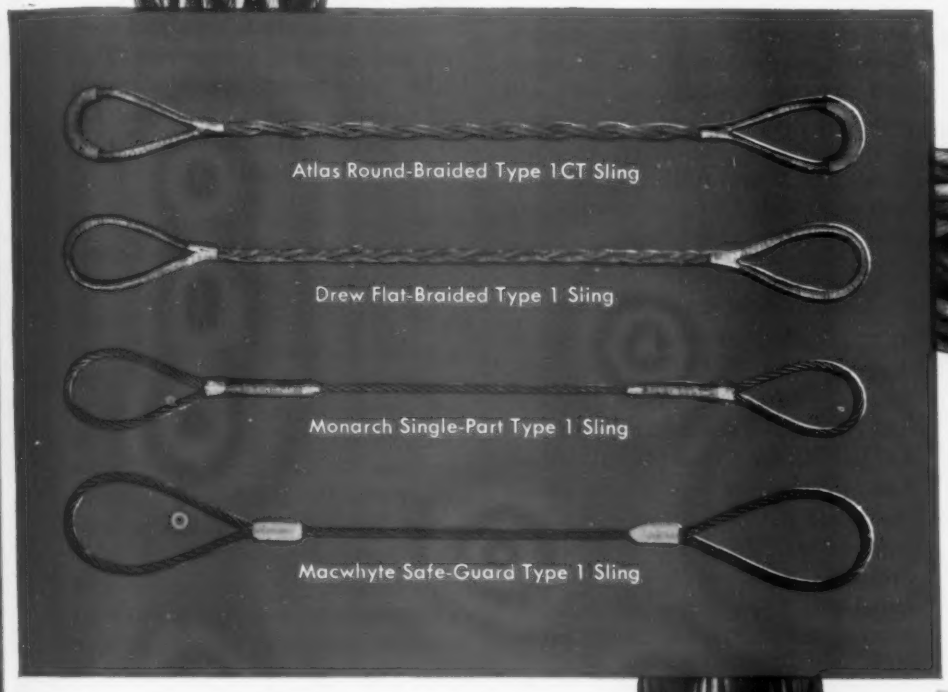
(*Continued on page 24*)




*See these Macwhyte Slings*

*and many more*

*at the Safety Congress Booth No. 78*


Atlas Round-Braided Type 1CT Sling
Drew Flat-Braided Type 1 Sling
Monarch Single-Part Type 1 Sling
Macwhyte Safe-Guard Type 1 Sling

# Macwhyte Slings

Here are four of the hundreds of slings pictured and listed in the newest Macwhyte Sling Catalog. All these slings are made to order in any size with fittings needed for your job. All three types of body are available: round-braided, flat-braided, single-part. Macwhyte has worked with hundreds of sling users toward more efficient materials handling. Our engineers are ready to study your sling needs and make recommendations.

*For cranes and hoists specify PREformed Monarch Whyte Strand Crane Rope made by Macwhyte.*

*Manufacturers of Internally Lubricated PREformed Wire Rope, Braided Wire Rope Slings, Aircraft Cable, Safe-Lock Assemblies, Monel Metal and Stainless Steel Wire Rope.*
*Mill depots: New York • Pittsburgh Chicago • St. Paul • Fort Worth • Portland • Seattle • San Francisco • Los Angeles • Distributors throughout U.S.A.*

*New Macwhyte Sling Catalog.*

Send today for complete sling catalog containing detailed information about slings for every need.

(1314

*Member National Safety Council*

(Continued from page 22)

### Immediate Setting Floor Patch

40. Immediate-setting floor patch for repairing holes, ruts, breaks, and pitted areas in concrete floors, is described in folder issued by the Flexrock Co.

### Electric Grinders and Buffers

41. Buffing and polishing machines, combination grinders and buffers, and variety of grinding machines are illustrated and described in detail, as are attachments and accessories, in new catalog No. 72 just issued by The Hisey-Wolf Machine Co.

### Seamless Mechanical Tubing

42. New bulletin No. TB-340, designed to help tubing user determine whether he should use hot finished, cold drawn, or "roto-rocked" seamless mechanical tubing as the basis for his product, is available from the Tubular Products Divn. of The Babcock & Wilcox Co.

### Fractional HP Air Compressors

43. Monobloc air compressors capable of 2.6 to 5.0 cfm and up to 150 lbs. pressure psi are subject of specification sheet published by the Worthington Corp. Compressors are designed for pressure spraying, dry pipe sprinkler systems, operating pneumatic controls, presses, air cylinders, vises, small tools, etc., pressure lubrication, testing, cleaning and general small capacity uses.

### 500 Types of Wires and Cables

44. The electrical wire and cable department, United States Rubber Co. has published a new 186-page general catalog of its line of more than 500 different types of wires and cables.

### Conveyor Belt Lacing

45. Alligator long length conveyor belt lacing, is described in Bulletin A-70 published by Flexible Steel Lacing Co. Bulletin contains application views, sizes and list prices. These separable fasteners can be furnished in any length with hinge pins for joining flat conveyor belts of all widths up to 96" and thicknesses up to ⅝".

**LATEST TRADE LITERATURE**
**Check Over All Four Pages!**
**19, 21, 22 and 24**
**Check Coupon on page 19**

### O-Rings—Manufacture, Application

46. Comprehensive data on manufacture and application of "O-Rings" as static and dynamic seals, is presented in 16-page bulletin issued by the International Packings Corp. It contains discussion of properties and characteristics of basic rubbers. Groove machining details for static and dynamic applications, with and without "Back Up" or "Non Extrusion" washers, are given in chart form. ASTM and AMS specifications and applicable I.P.C. compounds are also shown in chart form.

### Oil-Purification Equipment

47. Booklet "Proven Protection Against Oil Failure" in diesels, turbines, transformers, switch gear and other oil-filled equipment, published by Honan Crane Corp., shows how purification equipment offers the solution to power interruptions, engine breakdowns and other utility problems resulting from contaminated oil. Applications of oil purification units to typical utility problems are illustrated.

### American Pattern Files

48. American Pattern Files for industrial use are the subject of illustrated folder 51-801 issued by the DoAll Company. Included among the standard files are pitsaw, tapered, pillar and warding files. The folder also contains information on special purpose files, American pattern rasps and file handles.

### Twin-Cylinder Stencil Duplicator

49. A twin-cylinder stencil duplicator is illustrated and described in printed matter released by Rex-Rotary Distributing Corporation. This double legal size machine has a printing area 17" x 13½" and two single legal or letter size sheets can be printed simultaneously, or one single sheet—note size to legal size can be printed. All sizes are fed automatically, air mail paper to card stock, and folded sheets. The duplicators are designed for either hand or electrical operation.

### Packaged Office-ettes

56. The Office-ette is the subject of a pictorial circular describing these "packaged" offices, issued by Itkin Bros., Inc. The offices include the Interviewer, the Supervisor, the Secretizor and the Coordinator, which are ready-made offices assembled from stock components consisting of panels and corner posts, desks (with and without drawers), plus glass, caps and footings and optional accessories. They make for efficient space planning, and provide privacy. Standard finish is gray or walnut, though other finishes are available.

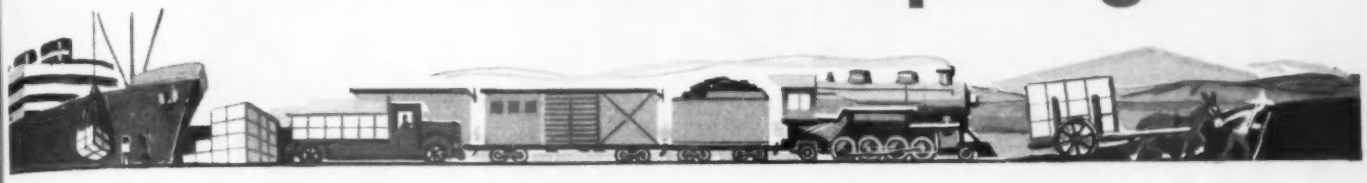
### Mechanized Accounting Case History

51. How the Royal Metal Manufacturing Company uses mechanized accounting for accounts receivable and accounts payable, receiving as a by-product, a detail sales and purchase, is told in certified case history No. 815 published by Remington Rand Inc. Accounting machine handles accounts receivable for example, by making entries simultaneously on the customer's statement, collated customer ledger, and proper journal. At the same time it automatically completes and prints the new customer balance. The operation is described in the folder with illustrations of the actual forms used.

### Guarding Against Fraud

52. "How to Guard Against Fraud and Loss Through Error and Negligence" is the title of booklet published by Cummins Business Machines Corp. It deals with the prevention of embezzlements by the cancellation of disbursement authorizations, by perforation of the "invoice bundle", and the use of perforated markings to validate requisitions or instruments against which departments pay out cash, issue materials, etc. Utilization of the perforating method for cancelling, marking forms, automatic numbering, coding, receipting, processing procedures, etc. is discussed.

# these American Springs"



## *says* UNDERWOOD CORPORATION, *world famous typewriter manufacturer*

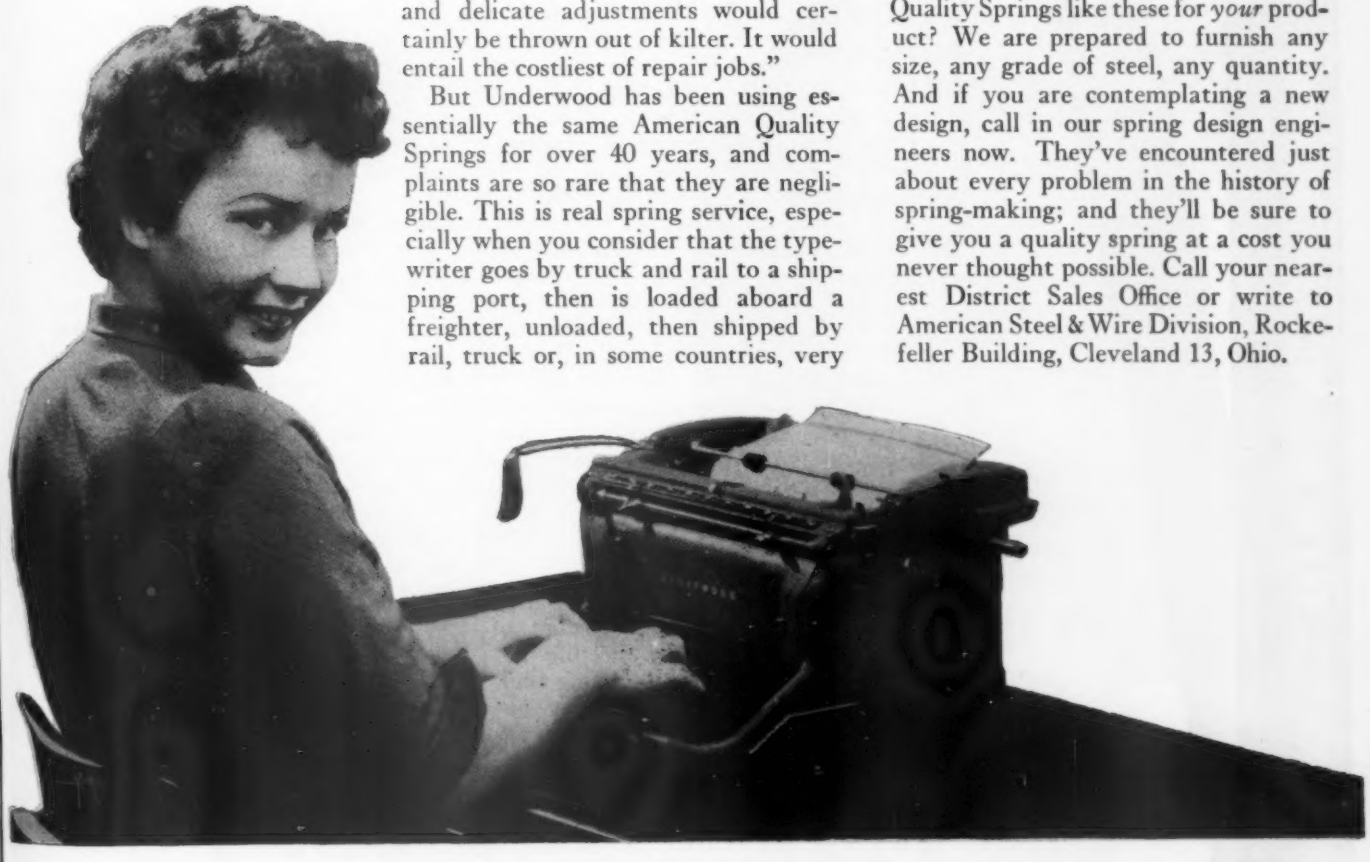
UNDERWOOD is so quality-conscious that they use a spring-cushioned packing crate for every typewriter shipped out of the country.

"These cushion springs have to be good," says Underwood, "because we use no other protective cushioning. Spring failure might result in broken castings, and delicate adjustments would certainly be thrown out of kilter. It would entail the costliest of repair jobs."

But Underwood has been using essentially the same American Quality Springs for over 40 years, and complaints are so rare that they are negligible. This is real spring service, especially when you consider that the typewriter goes by truck and rail to a shipping port, then is loaded aboard a freighter, unloaded, then shipped by rail, truck or, in some countries, very frequently *donkey cart* to some interior town.

As Underwood puts it, "The cushion springs must absorb unbelievably rough handling, jostling and drops. But we have a good reputation for damage-free arrivals."

Why not consider tough American Quality Springs like these for *your* product? We are prepared to furnish any size, any grade of steel, any quantity. And if you are contemplating a new design, call in our spring design engineers now. They've encountered just about every problem in the history of spring-making; and they'll be sure to give you a quality spring at a cost you never thought possible. Call your nearest District Sales Office or write to American Steel & Wire Division, Rockefeller Building, Cleveland 13, Ohio.



AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL COMPANY, GENERAL OFFICES: CLEVELAND, OHIO
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA., SOUTHERN DISTRIBUTORS • UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS

# U·S·S American Quality Springs

UNITED STATES STEEL

*for Quality Reamers* LI *stands alone*

LI

*The Reamer Specialists*

**LAVALLEE & IDE, INC.**

CHICOPEE, MASS.


# F.O.B.

## FILOSOFY OF BUYING

AFTER several years of agitation and study, including the services of an expert management consultant, the City of New Haven, Conn., where every municipal department has been handling its own purchases independently, has voted to set up a centralized purchasing department. The new system is expected to be in full swing in 1953, and the Aldermen and Board of Finance were quite enthusiastic at the prospect of potential savings. Then the modest budget for the new department was presented—a total of $17,352 for the salaries of a staff of four—and even before operations commenced, loud wails of anguish appeared in the local press, expressing the fear that much of the potential savings would be consumed by overhead. Based on the experience of scores of other municipalities, we are confident that centralized purchasing will pay off for this busy city of 165,000 population. But the premature complaint makes us wonder just how the city fathers expected the purchasing department to operate. It's adequate and competent personnel that makes any purchasing department a profitable operation.

• •

THE Dallas P. A. Association follows the pleasant custom of prefacing its monthly meeting notices with a bit of stimulating philosophy. One of the recent announcements, for example, reminded the members that:

*"Hardships and difficulties make men strong; ease and luxuries make men weak."*

Immediately below this observation we note the meeting place: the "Air Conditioned Brazilian Room" of the Melrose Hotel. Where the softening up process begins, no doubt.

• •

ROCKWELL Mfg. Company is running a series of institutional advertisements in the newspapers, reporting informally on various aspects of the company's operations and growth. We were interested to note in a recent issue of the *New York Times*, that President W. E. Rockwell, Jr., started his message with a little comment on purchasing:

*"Sometimes, it seems to us, the function of the Purchasing Department is the most misunderstood in any industrial company. Salesmen, and perhaps the public generally, often feel that a Purchasing Department is there to drive down prices in a Buyer's market, and to find material at any cost in a Seller's market.*

*"Our Purchasing Department has very broad responsibilities, two of which are of course to find the materials and supplies we need, and to buy them on the most favorable basis obtainable.*

*"But in either a Buyer's or Seller's market, our Purchasing Department is directed to examine quality first, and price second. Further, if material is hard to get and substitutes become the order of the day, purchasing must take the responsibility for establishing the fact that the quality of the substitute is at least equal to the originally specified material.*

*"The quality as well as the selling price of the finished product starts with sound purchasing. Therefore, we combine headquarters staff and local division purchasing to check and cross-check compliance to specification as well as price."*

• •

ANOTHER very interesting note from the same source is the fact that all of the company's salesmen and other traveling personnel were instructed, way back in August, to set up their itineraries so as to be home to vote on election day.

• •

THE "opposite number" to the black lists for which purchasing agents are criticized is the growing list of items that are barred from sale and shipment from NATO

countries to Soviet Russia and her satellites. Life is getting tougher and tougher for the red P. A. The original list, drawn up in 1949, contained 150 items. By last year, it had grown to 313. The latest revision, announced in September, topped the 500 mark. There are some interesting details in the careful product classifications. The Soviet buyer can still order a drilling machine to bore up to three holes simultaneously. But the four-holer is banned. That comes under the heading of precision equipment.

• •

RESOURCEFUL P. A. Clem Caditz of Northern Metal Products Co., Chicago, whose unique and highly original—and effective—appeals for scarce steel during the prolonged period of shortage were several times noted in this column, is featured in *Time* Magazine (September 15) for a procurement achievement in quite another field. After office hours, it seems, Mr. Caditz is a patron of the arts, an enthusiastic collector of Matisse prints. It was his ambition to sweeten this collection with at least one original, but found the price—through regular channels—prohibitive. So, applying good purchasing technique, he went directly to the source of supply, wrote the old master in France and made a modest offer for a drawing. No harm in asking. Some weeks later, his request was answered with a friendly letter and a delicate sketch, per specification. But in making his successful purchase, Mr. Caditz also destroyed the market. Mr. Matisse explained that he really wasn't a job shop or in the mail order business; his generous response was "completely exceptional", and M. Caditz's friends were not to be encouraged to duplicate the request, for further offers of that sort would be declined.

The Caditz Matisse, as reproduced in *Time*, is duly signed and inscribed *"Pour Monsieur Caditz"*. Poor M. Caditz, indeed!

• •

SOMEBODY in purchasing slipped—and inmates of the Concord (Mass.) reformatory for men were fitted out with knit panties originally made for young women enlistees in WAAC units during the last war, since purchased as surplus. They wore 'em, but the incident became one of the major grievances aired in a recent investigation.


Have you discovered these

'Hidden Values'

in Red-Strand wire rope?

You get 3 important, unseen values in Hercules *Red-Strand*.

The first is *extra endurance*.

The second is *consistently high performance*.

The third is complete *dependability*.

These values are made possible by Leschen's exacting insistence upon *higher-than-rated* quality . . . by precise, specialized manufacturing craftsmanship . . . and by the constant use of only the finest known grade of steel for long-lasting Hercules *Red-Strand* wire rope.

Service records prove these hidden values. Your records will too.

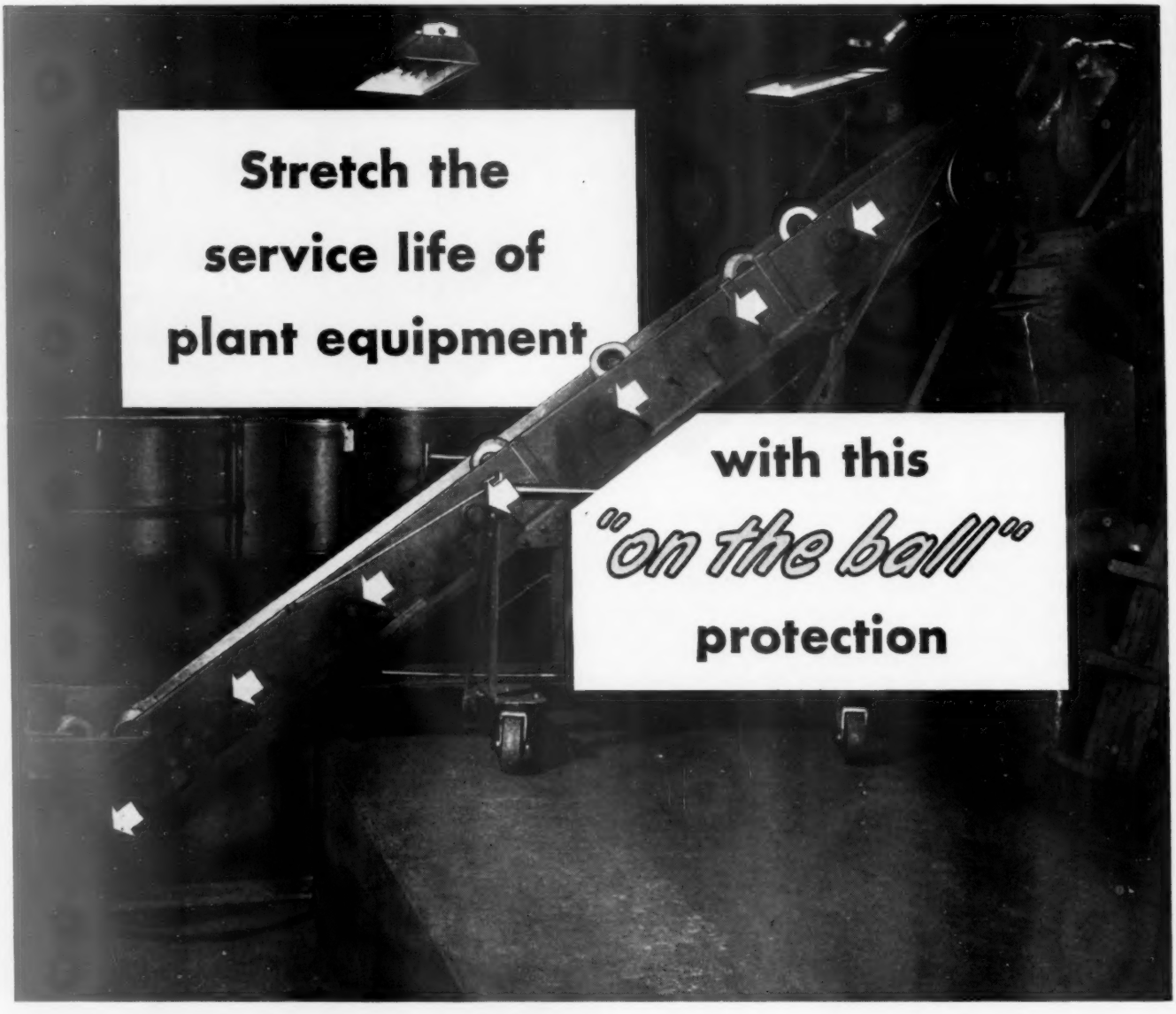
For savings' sake, find out

Higher operating profits may be yours with Hercules *Red-Strand* wire rope. Talk it over with your Leschen wire rope specialist . . . before you place your next rope order. Or, write for bulletin.

A. Leschen & Sons Rope Co., St. Louis 12, Missouri

In business only to make wire rope — better wire rope — since 1857.

DISTRIBUTORS IN ALL PRINCIPAL CITIES




**Operating conditions** of the conveyor illustrated above could make life miserable for some maintenance man and cost man too. The building is unheated. Only about two hours' work a day is required. Materials being handled are heavy forgings direct from annealing and normalizing furnaces. These forgings are hot enough to burn through the conveyor belt in a few months. Thus the bearings of the conveyor are subjected to dirt, moisture condensation, extreme heat and cold. With it all, they've been operating for *over seven years* . . . requiring only infrequent lubrication.

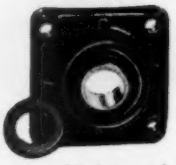
The bearings on this conveyor are Fafnir SA 1-11/16" Pillow-Blocks . . . 16 of them. They're sealed to keep contaminants out . . . grease in. These "packaged" units feature the famous Fafnir Wide Inner Ring Bearing with self-locking collar . . . easiest of all to install.

Wherever there are turning points on your plant equipment . . . on line shafting, blowers, fans, pumps, special machines . . . Fafnir "on the ball" protection means extra long service life. For details, call your nearby Fafnir distributor. The Fafnir Bearing Company, New Britain, Conn.

PILLOW BLOCKS

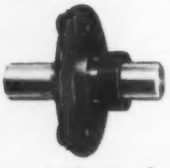
. . . all types . . . light, standard, heavy . . . fixed and floating.

CARTRIDGES



. . . light and heavy series.

FLANGETTES



. . . with pressed steel flanges.

**FAFNIR**
**BALL BEARINGS**
MOST COMPLETE LINE IN AMERICA

# TOMORROW'S PRODUCTS

THERE are a number of conflicting opinions, from sources that should speak with authority, as to the probable course of military procurement —the timing of its peak and levelling off, and the estimated volume to be permanently written into the national budget. These are highly important factors in all business planning, for there is a period of reconversion to be faced and eventually our industry and our whole economy must adjust themselves to some more permanent basis of balance between military and civilian production.

The military departments themselves are inclined to the view that the peak will be deferred and the stretch-out projected considerably longer than predicted by civilian forecasters. They have one very cogent argument in support of this view—the compelling factor of obsolescence. In major fields of military equipment, such as aircraft, electronic aiming and control devices, and heavy missiles, technical progress is so rapid that a substantial proportion of the items now in active production will be obsolete almost as soon as they are produced. Obviously any such development, desirable as it may be from the standpoint of progress and more effective national defense, is bound to sustain a high and prolonged defense production program.

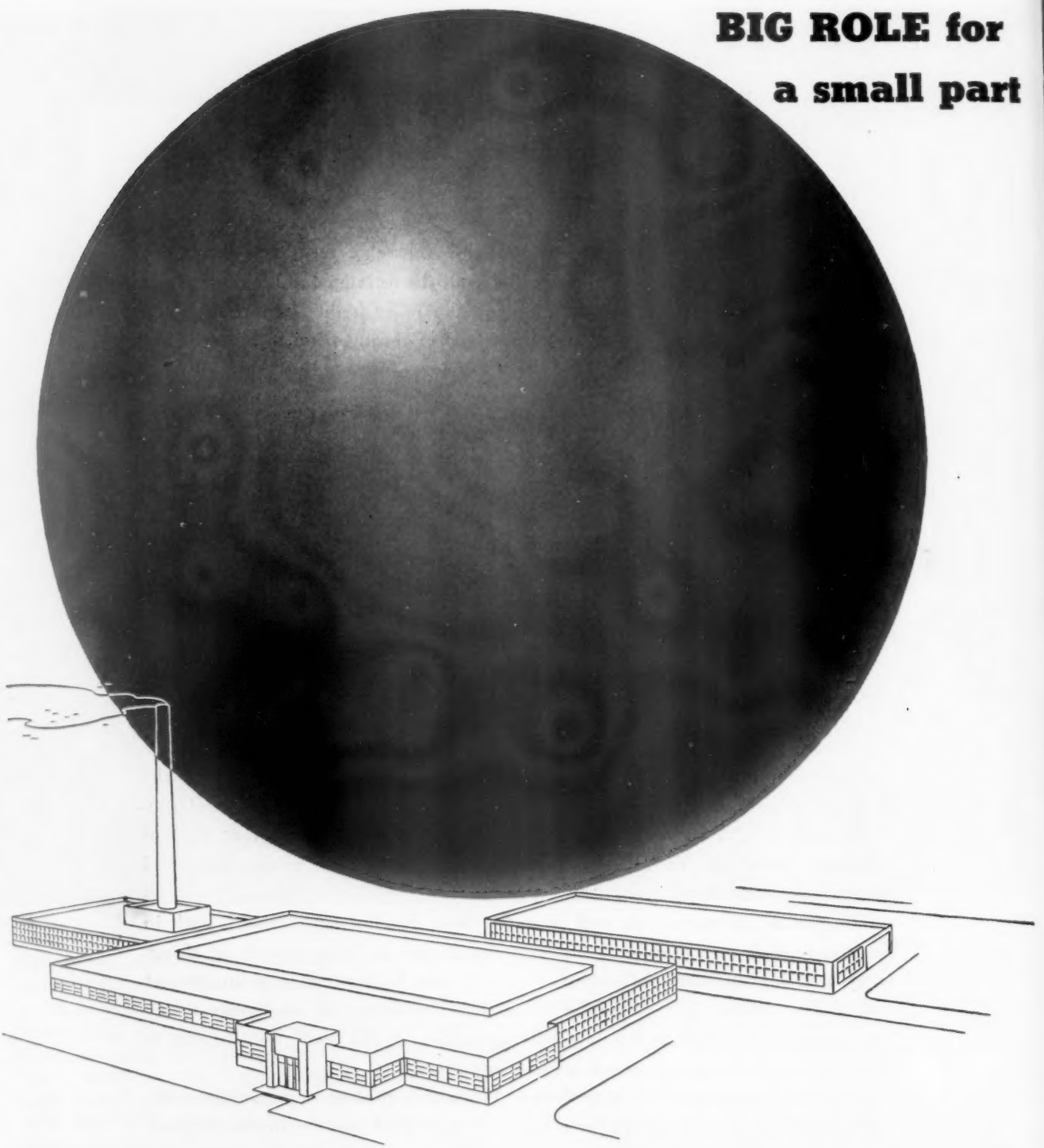
One important aspect of this situation is the fact that technical research and development on civilian products has also been progressing at a comparable rate, and will have a notable impact when these products that are now in the laboratory and design stage get into production and reach industrial and consumer markets. A September survey among our readers revealed that 81% of the companies are planning new products as a means of maintaining and expanding post-defense production.

Purchasing agents will do well to watch these developments closely, both in respect to their own company's products and in the shopping lists of the things they buy, for the factor of potential obsolescence is looming large in the not too distant future. And while the waste that is inherent in this process may be condoned in military procurement programs, it can spell serious loss to the industrial enterprise that is caught unprepared.

Look for tomorrows' products today. And watch that inventory. Otherwise, today's buying may be setting the stage for critical problems of surplus disposal in the period ahead. No company ever made a profit on obsolete inventory.

Stuart F. Heinritz

# BIG ROLE for a small part



In every phase of the American industrial scene, New Departure Ball Bearings play a leading role. They perform so efficiently, so effortlessly, that they are often taken for granted. But designers, engineers and manufacturers know how indispensable they are in thousands of applications.

New Departures increase the accuracy of machines and instruments . . . improve the efficiency and serviceability of almost any product you can name. They also simplify product design, reduce maintenance time and prolong life.

The Great Ball of New Departure symbolizes engineering excellence—and New Departure's application engineers and research facilities are always at your disposal. Keep your eye on the BALL to be sure of your BEARINGS!

NOTHING ROLLS LIKE A BALL

**NEW DEPARTURE**

**BALL BEARINGS**

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONN.

# Highlights

**This issue's important features summarized for the busy reader**

There's more to competent purchasing of **Aluminum Alloy Castings** than you might suppose. First, you select the casting method suited to design and quantity of parts (choice of three general methods plus several specials); then you select the alloy suitable to the method and to end use (wide range of A.S.T.M. standard specs with a variety of special properties); then you select a good supplier (out of several thousand possible sources); finally, you consult with the supplier, who may change or modify what you originally asked for. For expert guidance in this procedure, turn to page 82.

Many complicated purchasing programs, in industry and governmental buying, are simplified and controlled by means of commodity classification incorporated into a **Procurement Catalog.** It's a project of great detail, but following well defined general principles. The article on page 109 tells how the State of Virginia built such a catalog covering 83,000 items.

**Movie Making** is a business as well as an art, and both aspects of this industry are reflected in its purchasing problems. The story on page 77 relates some of the interesting experiences encountered in buying for one of the major studios, where even the most unpredictable requirements are somehow anticipated, and where wasteful practices are as little tolerated as in the most efficient manufacturing operation.

A far different set of circumstances and problems faced the buyers who had to **Convert and Equip** a warehouse for Army tank production and get the production line started. How they got the job done, substantially ahead of schedule, is told on page 90.

**Engineering Change Orders** and cancellations are a constant headache for the Purchasing Agent in the rapidly moving tempo of today's business, and they can entail serious losses for the company whose purchasing department fails to cope effectively with this problem. On page 71, a New Jersey P. A. tells how he has held cancellation claims to a minimum by anticipating them in contract arrangements and by maintaining a purchasing-engineering team to negotiate claims promptly and fairly.

**Mercury,** the liquid metal of many uses, is just as unique in its market behavior as in its physical characteristics. On page 97, an expert in this field traces and analyzes the mercury market over a 100-year period. Even though you may not have occasion to purchase mercury, the article will serve as a wholesome reminder that each commodity market must be studied and appraised individually. It isn't safe to base specific purchasing policies on general trends.

This month's **Guest Editorial** (page 69) is contributed by George H. Porter III, of Cleveland, N.A.P.A. Vice President for District 6. Mr. Porter, a representative of "small business", discusses the role of small business in the over-all national industrial economy, and some of the buying problems that go with it.

The current survey of purchasing opinion deals with the imminent advance in **Coal Prices** and raises the question of its probable effect on relative values and usage of competitive industrial fuels. Is coal pricing itself out of the industrial market? Turn to page 75 and compare your judgment with that of your fellow buyers.

Two important articles on **Purchase Law** emphasize the importance of conducting your business so as to keep the law on your side (page 126) and summarize court interpretations of your rights when the purchase order calls for "immediate" delivery (page 94).

Are you making full use of these monthly departmental features compiled especially for the purchasing agent? The **Washington Previews** (page 13) keep you informed on current developments in governmental policy. Another section is devoted to **Office Equipment and Forms** (page 175). Informative **Trade Bulletins and Catalogs** listed on page 19 are yours for the asking.

**COMING—IN NEXT MONTH'S ISSUE**

Important Papers Presented at District Purchasing Conferences

Analyzing Purchasing Procedures—Purchasing by Trade Name

# A man who can help you get STEEL!

In these days of great demand, the help of an experienced steel man is especially valuable. Did you realize that the services of such a man are available to you without cost or obligation? This man is your Ryerson steel service representative—a specialist in getting available steel to you quickly.

He cannot make steel, of course, but he does have up-to-the-minute information on our stocks at his finger tips. He does have years of steel experience that often enables him to recommend practical alternates when the steel you need is not on hand. And he does know every phase of Ryerson service from testing for quality to dependable delivery, including heat treating, sawing, shearing, flame cutting or otherwise preparing steel to your particular requirements.

He represents, and has the wholehearted support of, the largest steel-service organization in the world. Working closely with him are Ryerson engineers, metallurgists—authorities on carbon, alloy and stainless steels—ready for quick cooperation on unusual problems.

While we have thousands of tons of steel on hand for immediate shipment, it is spread among 15 plants from Boston to Seattle. And the recent steel strike, plus continued heavy demand, has unbalanced our stocks badly as to sizes and types. We believe this is the situation throughout the industry.

But your Ryerson service man is always ready to assist you . . . ready to help you scour the country from coast to coast to get the steel you need. So, talk over your steel problems with him the next time he calls.

**PRINCIPAL PRODUCTS**

**CARBON STEEL BARS**—Hot rolled and cold finished

**STRUCTURALS**—Channels, angles, beams, etc.

**PLATES**—Many types including Inland 4-Way Safety Plate

**SHEETS**—Hot and cold rolled, many types and coatings

**TUBING**—Seamless and welded, mechanical and boiler tubes

**ALLOYS**—Hot rolled, cold finished, heat treated. Also tool steel

**STAINLESS**—Allegheny bars, plates, sheets, tubes, etc.

**MACHINERY & TOOLS**—For metal fabrication

# RYERSON STEEL

JOSEPH T. RYERSON & SON, INC. PLANTS AT: NEW YORK • BOSTON • PHILADELPHIA • CINCINNATI • CLEVELAND • DETROIT
PITTSBURGH • BUFFALO • CHICAGO • MILWAUKEE • ST. LOUIS • LOS ANGELES • SAN FRANCISCO • SPOKANE • SEATTLE

# Purchasing for Small Business

**By George H. Porter III**

**George H. Porter III** is Purchasing Agent and Secretary of the Geo. H. Porter Steel Treating Co., Cleveland, a commercial steel treating organization founded in 1919 as a partnership and incorporated in 1927. He is currently serving on the Executive Committee of the National Association of Purchasing Agents as Vice President of the 6th District, consisting of 15 local Associations and more than 2000 members. District 6 embraces the important industrial area of Ohio, western Pennsylvania, and West Virginia.

He acquired his first business experience as a chemist for the Cosmo Laboratories of Applied Science, upon graduating from West Technical High School. Three years later he joined his present company as chemist, with added office duties. He took over the work of purchasing in 1933.

During all of this period he continued his formal education in night school courses, covering a wide variety of business, technical, and professional studies. In 1937, upon the death of his father, he was elected Secretary of the company, while continuing to handle the purchasing responsibility.

Mr. Porter has been a member of the Cleveland Association of Purchasing Agents for the past fifteen years, taking an active part in committee work and serving a term as Secretary-Treasurer. He became President of the Association in 1950, serving also as Co-Chairman of the N.A.P.A. National Convention, which was held in Cleveland that year. Following a term as National Director, he was elected National Vice President for the District in the spring of 1952.

Outside of business hours, he successfully operates a 25-acre farm in suburban North Olmsted. He is an ardent philatelist, a member of numerous stamp societies, three of which he has served as President at various times. As an avocation, he operates a stamp company known as "Gee-Lo", a combination of his first name and that of his wife, Lois, who shares this hobby.

Mr. Porter is a member of the American Society for Metals, the American Society for Testing Materials, and the Metal Treating Institute, now serving as local chairman of the latter organization. He is also a member of the Society of Automotive Engineers and holds life membership in the Army Ordnance Association and the Cleveland Museum of Art. He is very active in Red Cross work and carries a First-Aid Instructor's card. As a blood donor, he is now working on his fourth gallon.

The Porter family includes three sons: George IV, Richard, and Gary Lee.

MANY purchasing agents look with disdain on a P.A. whose purchases run into thousands of dollars, instead of millions. However, in a recent report covering four million firms in the United States—excluding agriculture, forestry, and fishing—about seven-eighths of these firms employed less than eight persons.

It is somewhat surprising that the small firm has had the ability to survive in an economic system like that of the United States, where industry tends to large-scale, integrated mass production, with complicated equipment and products. There are also many legal problems involving contracts, labor, wages and hours, social security, taxes, and the detailed, burdensome requirements of record keeping and reports.

It is the small supplier who is doing a big job these days, and the P.A. in that small company has a tough job to do in today's highly competitive buying market. In the metals industry, for instance, in the present peculiar market, the motor car manufacturers have taken over much of the country's defense work—and the small sup-

plier is being depended upon to a great extent to fabricate much of the material.

For example, up to this time the Chrysler Corporation has enrolled 1,756 *new* suppliers. Approximately 92% of these suppliers are "small business", employing less than 100 persons. This recent increase brought to approximately 9,500 the total number of companies who now supply Chrysler with civilian and defense parts, materials, and supplies. These suppliers are located in 1,247 cities and towns, in 41 states and four foreign countries. More than 62% of Chrysler's total income is paid out to its suppliers.

Thus it is apparent that the independent purchasing agent for small business, with his purchasing know-how, is making important buying decisions. The P.A. for a small concern does not have the legal department, the many clerks to locate materials, or expediting and public relations men to help him. He must make the right buying moves to effect savings in transportation, and in connection with quantity discounts. He must be alert to take advantage of special buying opportunities, and be wary of over- or under-buying, so that his company may operate successfully and show a constant profit.

The small business P.A. must know how, and where to buy, and where the items are to be used in his company.

He has to have specific knowledge of the requirements of his particular firm in connection with its material needs. To have this working knowledge, his background must include specific education, plus practical training, in all phases of his company's operations, so that he can integrate the necessities of the entire company as a going concern. He has to evaluate every requisition that comes across his desk. He must check and recheck to be sure each item is needed. He must strive for accuracy, be quick to avoid duplication in purchases. He must never buy a so-called bargain unless he is sure it is a good buy for his particular company. It is his constant obligation to make the best selections in the interest of his company.

But his duties do not stop at this point. He must follow through to be sure the material is received in good condition, and when needed. He is, in other words, a working library and a complete catalog. He is a salesman for his company through his contacts with suppliers and their representatives. He must do a good public relations job. It is a large part of the purchasing agent's work to maintain good relations with his suppliers. In this way he can be sure that in any forthcoming period of shortages his

(*Please turn to page 362*)

# Efficiency Desk—1850 Model

THE extraordinary piece of furniture shown herewith, which opens up to become practically a complete, self-contained office, was the last word in executive equipment a century ago, when it was used by the President of P. Lorillard Company, tobacconists. Even then, before the "Old Gold" era, the company was a venerable, successful, and progressive business concern, just entering upon its second century.

It is a handsome, though somewhat ponderous, example of the fine cabinet work of its day, embellished with elaborate inlays, and doubling as a writing desk, filing system, and safe. The designer put in everything he could think of, and he didn't miss much. But in due course it became a victim of inexorable progress, and gave way to new concepts of office efficiency and new ways of doing business.

Today, it's back, though not in active service. A real museum piece, it was resurrected from Lorillard's Jersey City warehouse and given a place of honor in a newly created museum on the 20th floor of Lorillard's main office on West 40th Street, New York City, along with other antiques and objects of interest going far back in the concern's 200-year history.

Director of Purchasing Fred Walson, who is looking it over, can't compete with the desk as an old-timer, but he is nearing the completion of a quarter-century of service with the organization. He was appointed to his present position in 1950.

# ACT PROMPTLY and GET the FACTS on Cancellations and Change Orders

. . . . How specific contract terms and a competent engineering-auditing team from the purchasing department save up to $200,000 a year

**By George Stone,** Director of Purchasing, Airborne Accessories Corp., Hillside, N. J.

George Stone has a long and successful record of cost-saving purchasing administration. Prior to his present affiliation with Airborne Accessories Corporation, he directed purchasing operations for the Lewyt Corporation, Brooklyn, N. Y., and Davis Aircraft Engineering, Inc., Lowell, Mass.

CANCELLATIONS and engineering changes can often be quite costly. In many purchasing offices, I believe it is the general practice to mail or wire a notice of the cancellation or engineering change to the vendor, with the request that the vendor promptly notify the buyer of the charges incurred incident to such cancellation or change. It has been my experience, and that of many other purchasing agents, that the information is usually forthcoming from the vendor two or three months after the notice of cancellation or change.

This waiting period is entirely too long, for a number of reasons. Possibly the most important reason is the difficulty of getting factual data on the actual costs involved. This difficulty increases enormously with every added day of delay. The purchasing agent has no way of determining whether there has been an artificial build-up of inventory, or whether the vendor during that time increased the fabrication of parts on order, through negligence or in the hope of being paid in full therefor, the result being that the buyer had to pay for parts that were either faulty, already obsolete, or just not needed. This is a situation which nearly every industrial purchasing agent has to meet. Airborne Accessories is not a big company, but in our case we found that the practice of merely sending out a notice by letter or wire was costing us from $150,000 to $200,000 a year.

After considerable study, we have effected a system by means of which we expect to eliminate these losses, saving our company up to $200,000 a year while dealing with our vendors in perfect fairness. The time for making a cancellation or change audit is at the time when such action is taken. Our new system centers around a Purchasing Department engineer-auditor team, which *delivers* a cancellation (or change notice) to the vendor, and immediately makes an on-the-ground analysis of the status of the job being cancelled—currently completed production, materials on hand and on order, tooling, and any other factors that may be involved.

There is no lost time—no two or three months of waiting for cancellation charge information from the supplier. This team, which consists of our Purchasing Engineer and an Industrial Accountant, is ably qualified to analyze production, assembly, material, tooling, and other cost factors. They make a thorough analysis of the job on the day of cancellation, and thus are able to protect our company's in-

AIRBORNE

ACCESSORIES CORPORATION
1414 CHESTNUT AVENUE, HILLSIDE 5, NEW JERSEY
TWX NEWARK 360 • WAVERLY 6-1700

ELECTROMECHANICAL EQUIPMENT FOR AIRCRAFT

7913

TO

**PURCHASE ORDER NO. A 8951**
REQ'N. NO. WL3349F R-502's NR
DATE September 15. 1952
INCLUDE PACKING SLIP IN EACH SEPARATE CONTAINER.
INVOICE IN DUPLICATE

SHIP TO

ACCOUNT NO.
M. O. NO.

PLEASE FURNISH THIS COMPANY WITH THE MATERIALS SPECIFIED BELOW, SUBJECT TO CONDITIONS OF PURCHASE ON FACE AND REVERSE SIDE HEREOF: And supplement A-100 attached

| WANTED | SHIP VIA | F. O. B. | PRIORITY | GOVT. CONTRACT NO. |
|---|---|---|---|---|
| | | | | |

| ITEM | QUANTITY | DESCRIPTION | PRICE |
|---|---|---|---|
| 1 | 235 | E-1658M1 - complete to b/p Revision A | 1.05 ea |
| | | Delivery: 90 - 11/1/52<br>60 monthly starting 12/1/52 Tools | $150.00 |
| | | 2% plus or minus over-run or under-run will be allowed. | |
| | | All blueprints are the property of AAC and are returnable upon demand. | |
| | | All specifications and tolerances must be held according to print Any deviation must be in writing approved by an authorized member of the purchasing department. | |
| | | All jigs and fixtures are the property of AAC and are to be returned as the vendor is considered a bailee. | |
| | | Delivery time is considered of the essence insofar as specified deliveries are concerned. | |
| | | AAC reserves the right in the event of overshipments as per schedule requirements to defer entry of billing to comply with our schedule requirements. | |
| | | Vendor is to remove all burrs including cut-off burrs, remove all sharp corners, even though it requires a secondary operation. | |
| | | We will debit your account $150.00 for tools, same to be recharged to AAC on completion of order. | |

UNLESS AN "X" APPEARS IN THIS BOX, THIS ORDER IS SUBJECT TO RENEGOTIATION AND PARAGRAPH 16 OF THE TERMS AND CONDITIONS ON THE REVERSE HEREOF IS APPLICABLE. ☐

PLEASE STATE DEFINITE SHIPPING DATE ON ATTACHED ACKNOWLEDGMENT AND RETURN AT ONCE.

Bill of Lading, Express Receipt or Shipping Memorandum showing Our Purchase Order Number must accompany each shipment.

AIRBORNE ACCESSORIES CORPORATION

By _____
Purchasing Agent

ROTOR-ette Lavatory ROTORAC SERVOSYN ANGLEGEAR

Typical purchase order, showing applicable special clauses typed on the face of the order.

terests in arriving at an equitable settlement with the vendor.

It is the responsibility of the engineer to obtain the complete facts about the status of the order, tooling, and materials. It is the accountant's job to analyze the financial aspects of the situation then existing—what materials are in inventory or in process, what finished parts are ready for delivery, and what materials may be on order for the job—and what the possibilities are of those materials being used by our company. A standard outline or check list has been prepared covering the significant details that should be covered by this audit.

### *Selective Application*

This procedure is followed in cases where the amount of money involved is over $300. This is the general rule. Obviously, there are varied factors and conditions to be taken into consideration, and in some instances we may not find it necessary to dispatch our engineer-accountant team with a notice of cancellation. In the main, however, where important parts and large orders are involved, the system has proven to be both time and money saving. Obviously, it is much more practicable to work out a settlement with a supplier on the ground, for at the time of cancella-

## PURCHASE ORDER CLAUSES

**Pertinent clauses from this list are typewritten on the face of the purchase order, in addition to the standard clauses printed on the reverse side.**

1. 2% plus or minus over-run or under-run will be allowed.
2. All blueprints are the property of Airborne Accessories Corporation and are returnable upon demand.
3. All specifications and tolerances must be held according to print. Any deviation must be in writing approved by an authorized member of the purchasing department.
4. All jigs and fixtures are the property of Airborne Accessories Corporation and the vendor is considered a bailee; they are returnable upon demand.
5. All fixtures are to be the property of Airborne Accessories Corporation and are to be returned upon demand and upon final payment of invoice.
6. In the event re-work is necessary due to non-adherence to specifications and only if through the fault of the vendor, Airborne Accessories Corporation at its discretion may re-work same and charge back to the vendor at the prevailing hourly rate.
7. Delivery time is considered of the essence in so far as specified deliveries are concerned.
8. Airborne Accessories Corporation reserves the right in the event of overshipments as per schedule requirements to defer entry of billing to comply with our schedule requirements.
9. First piece inspection will be furnished by Airborne Accessories Corporation at its discretion in order to maintain as closely as possible prevention of percentage of rejection. This inspection, however, is not binding or final in so far as acceptance by our authorized inspection department.
10. Vendor to furnish material.
11. All specified finishes on print must be adhered to unless otherwise noted.
12. Vendor is to remove all burrs including cut-off burrs, remove all sharp corners, even though it requires a secondary operation.
13. Certification of plating is required by an approved source of the Air Force. Said certification must accompany each shipment of said order. All specifications pertaining to plating must be adhered to, and are subject to inspection report.
14. Three copies of certification analysis are required to be sent with each order.
15. Any increase in price is not valid unless approved and signed in writing by the Director of Purchasing.
16. In order to insure prompt payment, it is necessary to inform Airborne Accessories Corporation of any item ordered from an outside source which does not come through our Receiving and Inspection Departments but is received by you from our organization's vendor on direct shipping instructions. You are to notify us immediately as to the amount of material received, and condition. This should be marked to the attention of our Accounts Payable Department.

tion all the facts and evidence necessary to make a fair adjustment are readily available.

Where the sum involved is less than $300, a special formal notice of cancellation is sent to the vendor, usually in confirmation of a telephone or telegraph notice. This notice calls for acknowledgment by the vendor, who is also asked to furnish information in regard to job status, material, and tooling supplied by our company. The notice also asks the supplier to set a date for engineering review and cost audit by Airborne should the latter deem it necessary.

As stated, this form is not sent to the vendor in cases where large sums are involved. In such cases, the vendor is furnished with the formal cancellation or change order in person by our auditing team. This makes it impossible for the vendor to distort facts or build up an unjustified cancellation cost, if he should be inclined, for our representatives are on hand to make a first-hand and immediate check of the situation.

### *Order Terms Are Clear*

A very important part of our program is the inclusion of definitive clauses in our purchase orders, setting forth or calling attention to specific conditions and terms pertaining to the transaction. As many purchasing agents have learned, it is sound practice to be specific on points that are liable to become matters of issue.

For this purpose, we have prepared a set of standard clauses, sixteen in all, for use on our purchase orders, selection therefrom being based on the requirements of the particular job, our experience with the vendor, and other factors. This set of clauses, shown herewith, was born of long experience in the ordering of components and fabricated parts. Needless to say, we secured the approval of our legal department in the preparation and phraseology of these clauses, in the knowledge that they must in themselves be legally valid.

This set of clauses covers overrun and under-run allowances, adherence to specifications and balances, re-work charges, ownership of blueprints, jigs and fixtures, vendor to furnish material, finishes, price increases, and—of great importance—"Delivery time is of the essence" insofar as specified deliveries are concerned.

AIRBORNE ACCESSORIES CORPORATION

TO:

SUBJECT: Confirmation of (Telephone__Telegraph__Other___)notice of Purchase Order change.

Gentlemen:

1. We have found it necessary to change the Purchase Order listed below to the extent indicated.

   Purchase Order A-_____Item #_____Part No._____

   From:

   TO:

2. You are hereby instructed to:

   (a) Stop all placing of orders ___
   (b) Terminate exisiting orders, etc. ___
   (c) Make no shipments against the original requirement ___

3. No charges caused by your failure to take action will be allowed.

4. All material to be preserved pending our instructions.

5. An authorized officer is to acknowledge.

   Note: Refer all correspondance covering this charge to N. N. Shak, Accounting Department.

---

TO: AIRBORNE ACCESSORIES CORPORATION
1414 Chestnut Avenue, Hillside 5, New Jersey

___Charge ___No Charge

The following raw material and/or tooling supplied by Airborne being held at our plant:

_____

_____

_____

**Formal notice of purchase order change, delivered to vendor. Where an engineering review and cost audit is indicated, a supplementary form is used to suggest an early, definite date for such action, with duplicate for acknowledgment by the vendor.**

We include in our purchase orders specific clauses selected from this list, which we feel are necessary to adequately protect us in the performance of the contract and in any action we may have to take. This is of course in addition to the standard clauses which are printed on the reverse side of the purchase order, covering such terms and instructions as packing, warranties, inspection, patent indemnity, compliance with governmental regulations, renegotiations, contract termination, and the like.

When a requisition is received and processed, the buyer indicates, by number, for the guidance of the typist, each of the special clauses that is to be included. These special clauses are then typewritten on the face of the purchase order in the course of its preparation. For example, clauses 1, 2, 3, 4, 7, and 12 have been typed on the purchase order shown herewith.

Selection of the pertinent clauses is determined by various factors. Clause 1, permitting 2% over-run, would be used when ordering a screw machine part at $25 or so per M, and where the volume is not too large. However, when components or completed assemblies are concerned, and prices run from $5 to $200 per unit, we do not allow the over-run. The "Time is of the essence" clause is always used, since it protects Airborne in insisting upon delivery per schedule, and in the event of a cancellation for this clause it is a guide in checking on receipt of materials by the vendor for production to meet our schedules.

Of course a contract clause does not insure vendor's performance, but it is a necessary tool of purchasing to correct conditions due to non-performance. At the present time, for example, we have a case therein, due to delinquent deliveries

AIRBORNE
ACCESSORIES CORPORATION

Engineering Review

Vendor
Purchase Order A-
Part Number E-
Date

1. Is it the part called for on the above purchase order?

2. Is the part good?

3. Can the part be used by the vendor for another order of ours?

4. Recommended disposition of part.

5. Stage of completion of part.

by

Cost Audit

1. Quantity checked?

2. Quantity compared with purchase order delivery schedule.

3. Audit Cost Labor and Material Tickets.

4. Audit expense rates.

5. Tooling costs.

6. Comparison of costs with their original cost estimate and quotation of selling price.

7. Any other audit functions deemed necessary.

by

**Check list and report outline used by Airborne's engineer-auditor team in analyzing a vendor's cancellation charges.**

by a vendor whose orders with us total more than $75,000, it is necessary for us to secure new vendors without interfering with present production. This can be done only by allowing the present vendor to ship until such time as new vendors are able to meet our commitments. We will then be in a position to cancel out the present orders under this clause, and with the aid of our auditing team we will determine what the estimated cancellation charges would be. Then we will be able to say whether it would be wise to cut back or cancel with the original vendor or allow him to continue, based on the money value involved. We will know to what extent our company would suffer by cutback or cancellation, and be able to determine what action we should take. In this particular case, the units are not coming in according to specification, and delivery schedules are not being met. The special clauses that we inserted on the face of the purchase order will take care of both situations.

Important change orders are handled by our engineering-auditing team in the same way as cancellations. A change order is primarily a notification from engineering that there is a mechanical change in design involving a dimension or a tolerance. Usually vendors will make additional charges for such changes, as they may involve additional operations and more time. Sometimes, on the other hand, a change may warrant a lower price.

In the case of a change involving a large amount of money, Purchasing immediately makes a check and advises Engineering as to what the additional cost will be. The Purchasing Engineer also gives consideration to the fact that the change may not be critical, and therefore might be deferred until existing commitments are fulfilled, without any serious consequences in respect to the product.

As requisitions come to us, we try wherever possible to get the tolerances opened up before we give a print to a vendor; this is one of the responsibilities of our Purchasing Engineer. The elimination of unnecessarily close tolerances makes for big savings in the placement of orders. However, in the event changes are necessary, our engineer and auditor will determine the basis of the additional cost before vendor's figures are accepted.

If a vendor has followed the original plans and has fabricated parts, it is quite conceivable that a portion of this production, or all of it, must be scrapped because of the change in specifications. If too much money is involved, we consult with our production department and, with their approval, we may issue a use-up order to continue on the old specifications until the material has been absorbed, and then go into production on the new specifications. In many instances. this will have the effect of eliminating an increase in price.

In some cases, our Purchasing Engineer has found that an increase in price is asked for by a vendor, not because the change in itself warrants an increase, but to offset a loss on finished work that he may have projected ahead of schedule. We now have outstanding an order for parts at $4 each, totaling $36,000, on which a change is requested by our engineers. The cancellation charge in a case like this would normally cost us around $7,000 or $8,000.

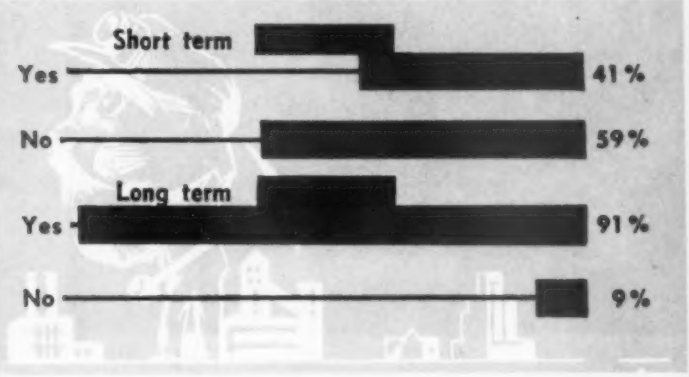
Before sending the vendor a partial cancellation, we ascertained how much material he had on hand and how much work had been done. We found that we could severely cut back on the order, and that the cost of the change should not be more than $1,000. With this information, our engineer-auditor team is prepared to deliver the cutback order, armed with the basic data for making an equitable settlement with the vendor on the spot. Obviously this is far more advantageous from our standpoint than merely sending the supplier a cutback notice and waiting two or three months for him to submit a claim or statement of cost. The data for an audit as of the time of cancellation would then be much more difficult to obtain, and we might be obliged to accept charges considerably higher than is warranted and proved by our prompt action.

# Is COAL PRICING ITSELF OUT of the Industrial Market?

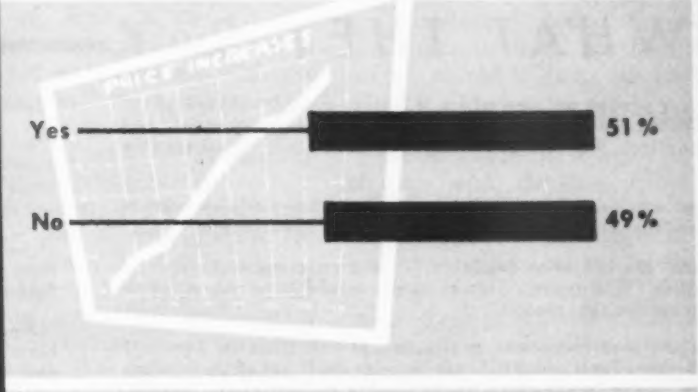
*The coal industry—producer of one of the country's most valuable and most versatile resources—has had to cope with two powerful factors during the past several years in an attempt to retain its markets. These factors are the progress of competitive fuels, and increasingly high production costs. Now production costs are headed up again under pressure of new wage agreements reached with Mr. Lewis' union. Purchasing agents are directly concerned with this vital fuel, and we asked their opinions on how new developments will affect the future of coal and its markets.*



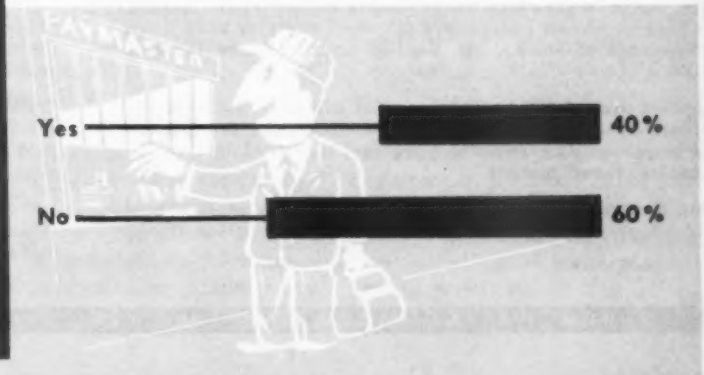
**1** If price rises follow the new wage agreements in the coal industry, do you believe that coal will lose any substantial part of its market as an industrial fuel ?




**2** Do you anticipate any adjustment in prices of competitive fuels to maintain present cost ratios ?




**3** Do you expect that the coal wage adjustments will be a pattern for wage increases in the production of competitive fuels ?



❹ In your opinion, will increased coal costs stimulate the expansion of other fuel industries to make competitive fuels more available in predominantly coal-using areas ?

❺ Has your company installed multiple or stand-by burner equipment capable of using different types of fuel, or does it contemplate making such installations ?

**About 12% who have the facilities intend to increase them in the near future.**

❻ Has natural gas made any substantial progress as an industrial fuel in your area during recent years ?

## WHAT THEY SAY

"We now occupy our new plant. When we considered fuels prior to building, coal was ruled out because of its arbitrary nature and its handling. We felt the trend was even then unmistakably against coal."

"In our area (northeast Ohio), natural gas has made such great progress that curbs are being placed on new installations."

"Natural gas has been available for domestic use only, due to allocation (Wisconsin). This company would have converted to gas except for that reason."

"With the ever increasing productive power, plus the low cost of 'substitute fuels', coal is likely to price itself out of the heating picture. In the larger cities where the big industries are located, it has become almost compulsory for them to try to keep down the annoyance of smoke, etc. This is another factor favoring substitutes."

"It appears that a basic fuel such as coal will never be seriously threatened by others. (Atomic energy is another matter). Adjustments in price will eventually force coal to extend research to increase its over-all market."

"In our program (5-years) our plans include conversion to a different type fuel. Natural gas is now within 15 miles of our plant."

"John L. is slowly killing the goose that lays his golden egg."

"We have converted our two plants to oil heating in the past 14 months because we do not have the storage space to keep the large stock of coal necessary to protect us against closing during coal strikes."

"Coal—long range—is still to be a prominent fuel, but in modified form, e.g. powdered or converted to gas underground. No other fuel is abundant enough to handle forseeable demand."

"Over the long run (10-15 year period) coal has consistently been a lower cost fuel—even including higher maintenance costs, and annual shut downs."

"Price increases, plus potential strikes, which make a stockpile necessary, are making oil a potential industrial fuel even in the coal section of Illinois."

"Substantial increases in coal freight rates have been, probably, more harmful to the coal industry than wage increases in the past six years. I believe that coal carries far more than its fair share of the operating costs of major eastern railroads. Freight rates are the least flexible type of costs."

"Compared with our coal, steam produced by gas fuel is one half that of coal, and less for oil."

*This purchasing job is a problem of anticipation*

# Purchasing for Paramount

**By Fred M. Burt**

Oliver C. Stratton, Purchasing Agent, Paramount Pictures Corp., Hollywood, Cal.

THE supply requirements of modern motion picture making—the ordinary and the extraordinary, the expected and unexpected—cover an amazingly wide range of demands. There are, of course, the relatively predictable requirements for operating, engineering, and maintenance activities—a large-scale procurement program on its own account. But on top of this there is an enormous and diversified list of special and unusual items to be procured. The "raw materials and components" of motion picture production, the sets and properties, that will be needed, are not so readily predictable; frequently they are without precedent, and almost always required on very short notice. Yet the purchasing agent for this industry has the basic responsibility for providing them "in the right quality, at the right time, and at the right cost".

It would be a natural reaction to conclude that purchasing for this business is different than in any other. It would be more accurate to say that it is like purchasing for any other manufacturing enterprise —only more so. Practically every problem encountered in a normal industrial operation has its counterpart here, usually in an intensified degree.

For example, industrial purchasing agents are constantly warned against incurring expensive downtime on production machines for lack of materials. Motion picture production is very carefully scheduled and coordinated to bring together the technicians, the actors, the sets, and the equipment at the right time and place for every scene. Picture production costs average $2,500 an hour. Thus a delay because of the lack of even a small but essential item, right on schedule, can become very costly indeed.

On the matter of right quality, the producers are acutely conscious that their product comes under the scrutiny of a highly observant and critical audience running into the millions—the more the better—and consequently every detail must be authentic and right to maintain product quality and acceptance.

Then there's a little matter known as inventory, which is giving all purchasing agents considerable concern. At Paramount Pictures Corporation, for example, the stock inventory of some 20,000 different items amounts to about $375,000 at the end of each month, and the department makes it a point to maintain a turnover rate of four times a year. That involves quantity control and balance, the adjustment of stock amounts on individual items, and the prompt disposal of obsolete items. All of this responsibility is left to the judgment of the Purchasing Agent, his standard of performance being "what is in the best interests of the Corporation".

Finally, there's the matter of costs. There is a widespread popular misconception on this point, dating back to the early and prodigal days of the industry. But it is no secret that the motion picture today is a highly competitive field, facing rising costs as in every other phase of industry, and placing a premium on efficiency of operation to maintain a profitable position. The industry has responded to this challenge splendidly. Its efficiencies compare favorably with those of the best of manufacturing and merchandising organizations. The old days of waste are gone forever, and high standards of careful, efficient planning have accomplished wonders in shortening shooting schedules, lopping off avoidable wastes, and thus, quite frequently, staying well under budgeted expenses. These accomplishments in cost saving would obviously bog down completely if Purchasing and Stores, and other contributory departments, were not also doing a 100% job. The Purchasing Agent does't have his name flashed on the screen along with those of the stars, directors, designers, camermen, sound technicians, and make-up men, but behind the scenes he too is doing his part.

### *Problems of Anticipation*

Therefore the key factor in purchasing and stocking expendable items and supplies, and in having available the wide range of diversified proporties when needed, is that of *anticipation*. The ability to make these provisions is necessarily based on a complete background of experience in the industry.

Purchasing Agent Oliver C. Stratton of Paramount Pictures Corporation, Hollywood, has that background of experience. Because of it, plus ability to organize and administer an active purchasing department, his office is an excellent example of intelligent pre-planning, efficient operation, and the imaginative initiation of some major cost-saving practices.

Compact stock records keeping track of more than 20,000 items. The Kardex file contains the perpetual inventory cards; the five loose-leaf binders above are the key to the numerically coded product classification; and the rotary file at right is used for 1,800 low-cost staple items of stationery and hardware supplies which do not warrant the cost of elaborate records.

Section of the supply stockroom devoted to stationery and electrical items.

The small properties stockroom houses an infinite variety of furnishings and accessories to provide authentic detail for movie sets depicting the tastes and surroundings of any historical period, past or present.

Mr. Stratton's college education was in the field of architecture and decoration. Shortly after his return to civilian life, following World War I, he joined the old Fox Film Corporation, in charge of properties and set decoration, including procurement of set materials and furnishings. Subsequently he spent some three years with Thomas H. Ince and Warner Brothers in a similar capacity. Moving over to Paramount in 1935 to head the Properties Department, including properties procurement, he took this opportunity to make extensive money-saving additions to the already large variety of properties housed in the Paramount storage rooms, to make the studio largely self-sufficient in equipping its stages and outdoor sets with the furnishings and properties for realistic and historically correct depiction of scenes and action of both modern and ancient periods. Later he became Assistant Operations Manager. On January 1, 1949, he was appointed Purchasing Agent. By this time, he had certainly acquired a rather complete knowledge of movie requirements and buying — what, when, where, and how much.

There were many difficulties to be overcome. During the late war, government restrictions prohibited studios from buying more than $5,000 per picture in the way of new materials, including fabricated sets. But this "bad news" was largely instrumental in saving Paramount close to a million dollars since that time, in set costs—with the same tempo of savings to continue for many years to come—through the use of thirty-two panelled rooms purchased by Mr. Stratton at a total cost of about $50,000, plus the cost of dismantling, shipping to the West Coast, and reassembling with interlocking devices for different arrangements, averaging about $2,000 apiece.

These sets, imported from Europe and from old American mansions, cover a wide range of periods, going back to early 17th Century English. Made of oak, walnut, mahogany and pine, in solid wood, many with intricate and under-cut wood carvings, they are impossible of replacement at any cost. Included were walls, columns, moldings, baseboards, doors, windows, fireplaces, and hardware, making each set a complete and authentic unit. One room in pine came from Rossanaugh House, a castle built in 1617 at Wicklow, Ireland. An oak room of the Georgian period came from Hamilton Palace in London. Other rooms were procured from the Hearst collection, from the Ogden Mills house on Long Island, and a number of New York mansions.

On the average, these sets would cost $12,000 or more to reproduce in studio type materials (principally plaster) to be used but once, and this cost would be incurred all over again for a second use. In the permanent materials, with provision for rearrangement to fit any given requirement of setting, they have been used over and over again, serving as throne rooms, ball rooms, state dining rooms, living rooms, libraries, embassy rooms, swank hotel lobbies, directors' rooms, and many others.

Most notable among these rooms are three from the Vanderbilt house on Fifth Avenue, New York City. Let Mr. Stratton tell the story of this purchase in his own words:

### *Profitable Purchases*

"When we heard that the Vanderbilt house was going to come down, in 1943, we tried to arrange with Mrs. Vanderbilt's agents to get the first chance at the interiors. However, she sold the entire property, in a lump lot, to the British Astors. They later directed that everything possible be sold and the house torn down. When this word came to us at the studio, time was very short, and I had to act quickly. To complicate matters, I couldn't get a plane. My train arrived in New York just a few minutes before the sale, so I went right there without stopping at a hotel.

"We were particularly interested in the dining room and the ballroom, and I was prepared to bid as high as $25,000. A few hours later, I ended up with both rooms, plus Cornelius Vanderbilt's library-study, for $5,900. The ballroom alone, 30 x 50 feet and 18 feet high, all in carved oak, was reputed to have cost $75,000 at a time when the dollar had a lot more purchasing power than it has in our day. The extra room, the study, which came as a sort of bonus, was 20 x 30 feet, in South American mahogany.

"The total cost of the ballroom, including disassembly, transportation, and refurbishing at the studio, was around $10,000. Our studio estimators set a cost of $25,000 to reproduce the ballroom in studio materials for one-time use. As a matter of record, it has been used about 25 times to date, at a cost of about

Charles Heston, featured player in "The Greatest Show on Earth", displays one of the gigantic 50 kw light bulbs specially procured for that production.

$500 each time to assemble. You may have seen it several times in various guises. Just recently we had it set up for 'This Is Dynamite', subdivided as a suite and office. We shall probably use this room, and the others, dozens of times again in future years, saving another million dollars or more in set costs. Rather profitable buying, wasn't it?"

Another profitable purchase brought in two Baldwin steam locomotives, Nos. 11 and 22, built in the 1860s, and 29 freight and passenger cars all more than 80 years old, believed to comprise the oldest operable standard gauge railway equipment in this country. Besides being used many times by Paramount in its own productions, practically every studio has rented some of this equipment at one time or another.

### *Organization and Records*

The Purchase and Stores organization for handling this supply program is relatively simple. The buying staff consists of Mr. Stratton and Assistant P. A. Roy Stack, assisted by a secretary and two stenographer-clerks; an outside buyer for "Properties," installed by Mr. Stratton when he headed that department, continues to handle these special requirements, which do not lend themselves to regular stock procedures, independently of the Purchasing Department proper.

In charge of stores, inventory and stock records, are Head Stock Clerk M. A. Alexander, Inventory Clerk E. T. Baker, Receiving Clerk Don Rayle, a half dozen stock service clerks and a lumber yard foreman.

Requisitions for materials and supplies originate daily from 55 operating departments. Requisitions to the general storeroom will average between 100 and 200 per day. Purchase requisitions for non-stock items number about 100 daily, plus about 30 re-order slips from the storeroom for stock replenishment. More than a million feet of raw film is purchased weekly. On laboratory chemicals, there is a weekly report of stocks on hand, with an estimate of how long these stocks will cover requirements, to guide replenishment purchasing.

To insure proper and prompt service on these varied requirements, reliance is placed on complete and accurate records, but the system has been kept simple, and Mr. Stratton has tempered the over-all policy with common sense lest the cost of record-keeping and other paperwork should get out of proportion to the value of the items concerned. For example, some 1,800 low-cost items in constant demand, in the hardware and stationery categories, such as bolts and nuts, envelopes, etc., where value per issue may be only a few cents, are recorded on a separate "500" rotary file apart from

SHOOTING SCHEDULE For Prod. 11482 - SOMEBODY LOVES ME - TECH Page 8

| Camera Day and Date | Description of Set or Location | Actors Working | Seq. | Page | Location or Studio | Day or Night |
|---|---|---|---|---|---|---|
| SEPTEMBER 27 THU 20 | INT LIVING ROOM - BLOSSOM'S APARTMENT<br>Sc: 259-260-261-262-263-264-265-266<br>Benny tells Blossom he is going to leave her and try to go on his | 1-2 | | 4 | STAGE | N<br>FALL 1921 |
| | INT HALL OUTSIDE BLOSSOM'S APARTMENT<br>Sc: 267-268<br>Benny strikes name from door card | 2 | | | | |
| 28 FRI 21 | INT PHILADELPHIA BOOKING OFFICE<br>Sc: 277-278-279-280<br>Agent books Benny for 2 days at Majestic | 2 | | | | |
| | INT HALL OUTSIDE BLOSSOM'S APARTMENT<br>Sc: 284<br>Bellhop delivers Christmas mail to | 3 | | | | |
| | INT LIVING ROOM - BLOSSOM'S APARTMENT<br>Sc: 285-286-287<br>Blossom disappointed - no Christmas mail from Benny | 1- | | | | |
| 29 SAT 22<br>MUSIC:<br>BLOSSOM SINGS "SOMEBODY LOVES ME" AND PLAYS PIANO | INT LIVING ROOM - BLOSSOM'S APARTMENT<br>Sc: 288-289-290-291-292-293<br>Sam arrives with flowers supposedly from Benny - tries to convince her she should go back to work - leaves - Blossom SINGS "SOMEBODY LOVES ME" | 1- | | | | |

Production schedule and bill of materials—Hollywood style. The script for "Somebody Loves Me" specifies: "Living Room, Blossom's Apartment, 1921." The Supply Department responds with a handsomely panelled interior that once graced the Blumenthal mansion on Park Avenue, New York, with furniture to match the period.

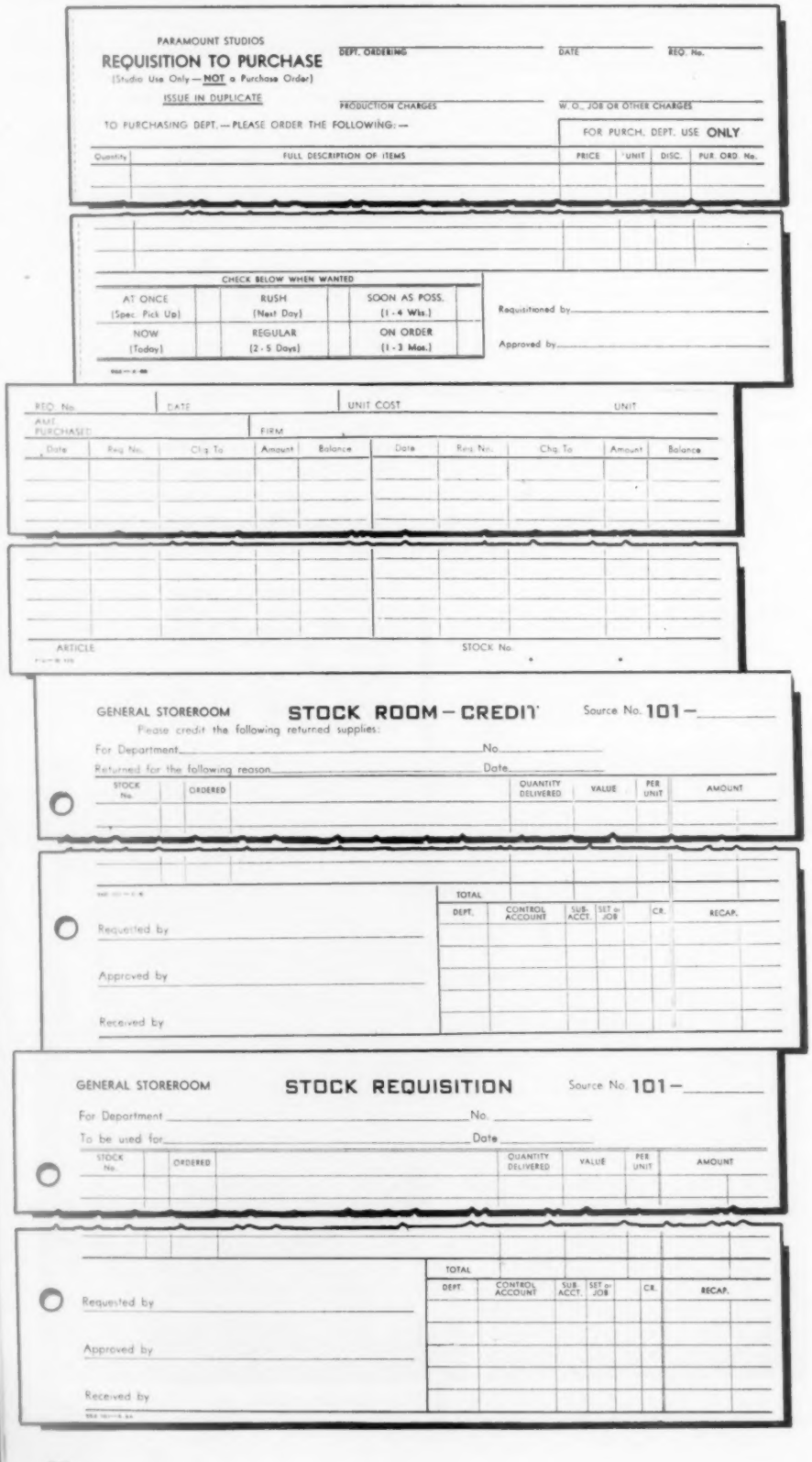
the Kardex perpetual inventory, and are inventoried only twice a year.

On the other items a very careful record is kept, so that the minimum stocks indicated may be maintained and that quantity standards may be adjusted in accordance with current rates of usage and with the ease or difficulty of procurement in respect to the various items; a further purpose of this record is to avoid the accumulation of "dead" items. There are about 3,500 active purchasing accounts.

All items are listed in loose-leaf books by numerical code numbers indicating name, type, model, size, etc., in five major classifications—Office Forms, Hardware and Fittings, Electrical, Paint, and Stationery. The lumber record is kept separately, at the yard office.

Even with this current data, past experience is not always a sufficient guide to cope with varying requirements. Far from reducing procurement to routine procedure, it still calls for alertness amounting almost to prescience on the part of Mr. Stratton and his stockroom men to anticipate requirements adequately. For instance, the total purchases of electric lamp bulbs in 1950 amounted to $39,000; in 1951, during the first four months alone purchases jumped to $43,000. There are 500 different types of lamps regularly carried in stock, ranging from tiny switchboard bulbs to big floodlighting equipment. An item may be dormant in stock for six months, and suddenly a demand comes up calling for 200 units. Or the requisition may call for something entirely new, like the three specially built 50,000 watt lamps used to light the entire circus lot in "The Greatest Show on Earth", on Florida location. That, by the way, represented a unique lighting arrangement never before employed in motion pictures; nevertheless, the bulbs were procured—and, happily, it worked.

**Requisition forms and purchase order record. Purchasing Department recognizes the need for prompt procurement, but controls this by demanding realistic information on exactly how soon items will be needed.**




### *Speed in Procurement*

As previously indicated, speed may frequently be the essence of the purchasing problem in this industry. Mr. Stratton has introduced a number of innovations to help in meeting this problem, and at the same time to control it.

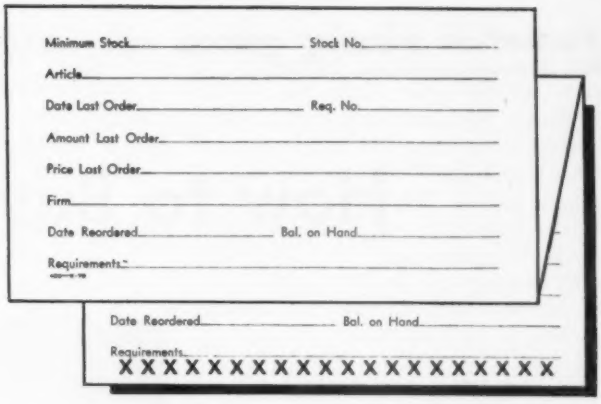
Stock bin tags are in the form of a three-fold card, 3 x 5, kept in a holder with the stock of each item. They show the prescribed minimum quantity, date and amount of previous order, balance on hand, and current requirements. When stock on hand is approaching the minimum, the storeroom clerk sends this triplicate record to the purchasing office to serve as a requisition to initiate a new purchase order. The original is used as a working copy by the buying staff; the second copy goes to a follow-up file in the stockroom office, and the third copy is returned to the storeroom when the order has been placed, to indicate that the request has been taken care of. When the new shipment is received, this third copy is discarded and a new triplicate form is made out.

The No. 2 copy in the follow-up file is constantly checked, and such action as may be necessary is taken to expedite the delivery. In case of special urgency, undue delays, or shortages in deliveries, it is sometimes found that the most effective action is to place an order with another vendor.

Traditionally, all orders are "rush" from the viewpoint of the requisitioning department, and the indiscriminate use of such instructions marked on requisitions tends to make the term lose its force, if not to become altogether meaningless. Yet it cannot be ignored in cases of real urgency, if the purchasing department is to furnish the necessary service. Mr. Stratton eliminated this vagueness, and put logic and realism into the procedure by adding a type box to the requisition form in which the requisitioner checks the degree of speed required in buying action, in one of six categories:

*At Once.* (Special pick-up)
*Now.* (Today)
*Rush.* (Next day)
*Regular.* (2 to 5 days)
*Soon as Possible.* (1 to 4 weeks)
*On Order.* (1 to 3 months)

On the *"Now"* and *"Rush"* items, usual procedure is to have the articles picked up by regular route trucks, three of which cover the whole Los Angeles area. The drivers call in to the garage at each pick-up point for any new instructions. This has proved to be an excellent and efficient system for expeditious service, yet it falls somewhat short of the super-service that is sometimes needed on the *"At Once"* category—and that's where the real emergencies arise. Paramount was one of the first companies to make use of mobile phone service, equipping six passenger cars and one truck with this two-way communication equipment. It has been useful in many ways, including purchasing. In a recent instance, an *"At Once"* requisition came to Purchasing after 4 o'clock in the afternoon, calling for an important item required on a set at 8 o'clock the following morning. One of the mobile phone cars was located in a distant part of the city, only a mile from the vendor's place of business, so that it was possible to get this shopping errand done before closing time, without incurring overtime or special service costs and disrupting the schedules of everyone concerned.


Minimum Stock _____ Stock No. _____
Article _____
Date Last Order _____ Req. No. _____
Amount Last Order _____
Price Last Order _____
Firm _____
Date Reordered _____ Bal. on Hand _____
Requirements _____

Date Reordered _____ Bal. on Hand _____
Requirements _____
XXXXXXXXXXXXXXXXXXXXX

**Stock bin card does triple duty, serving also as the purchase requisition and follow-up tickler.**

PARAMOUNT PICTURES CORPORATION

LABORATORY CHEMICAL INVENTORY

DATE August 9, 1951

| CHEMICAL | AMOUNT ON HAND | | SUPPLY FOR APPROX. DAYS |
|---|---|---|---|
| HYDROQUINONE | 1470 | LBS. | 147 |
| POT. BROMIDE | 75 | LBS. | 75 |
| SOD. SULFHITE | 9700 | LBS. | 97 |
| SOD. CARBONATE | 4600 | LBS. | 46 |
| QUADRAFOS | 250 | LBS. | 125 |
| POT. ALUM | 930 | LBS. | 93 |
| BORAX | 380 | LBS. | 38 |
| ACETIC ACID | 700 | LBS. | 70 |
| | | BOTTLES | |
| CITRIC ACID | 60 | LBS. | 60 |
| HYPO | 72 | SACKS | 55 |
| PHOTOL | 165 | LBS. | 55 |
| ALUM FOR FILTER | 1080 | LBS. | 108 |
| SOD. HYDROXIDE | 305 | LBS. | 152 |
| CARBON TETRACHLORIDE | 45<br>200 | Oil house<br>GALS. | 100 |
| LIGHT SOLVENT | 90 | GALS. | 45 |
| ACETONE | 25 | GALS. | 50 |
| TOLUOL | 150 | GALS. | 75 |
| KODALK | 200 | LBS. | 100 |
| Triclene | 105 | Gals | 105 |

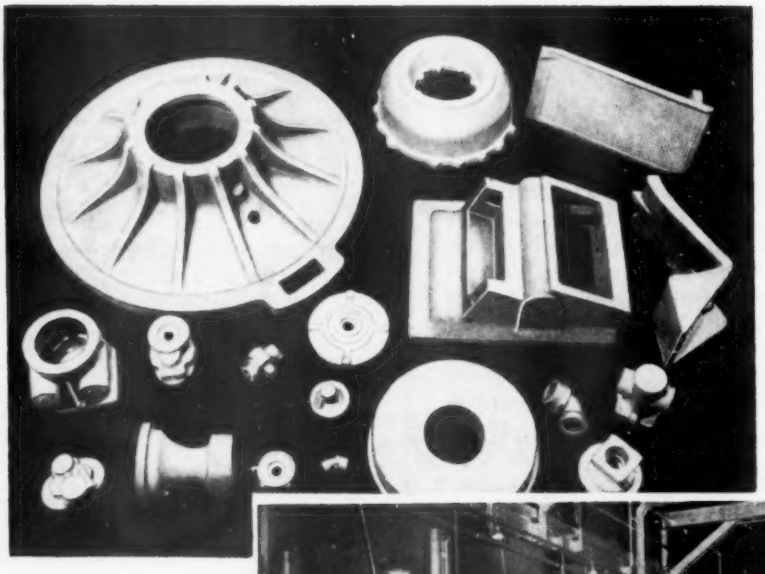
**A weekly stock report of standard laboratory chemicals is the guide to purchases for replenishment.**

The scope of Paramount's purchasing is so wide and varied that it is a job in itself to keep up to date on the latest models and innovations in all sorts of equipment, new materials, and supplies. Yet this is a "must". The Purchasing Department makes it a practice to search actively for such new ideas by attending exhibits, trade shows and conventions, and encouraging exhibitors to present further information on any new or improved offerings which may be of advantage or interest in the studio operations. These are brought to the attention of pertinent department heads, and every proposition is subjected to thorough analysis, laboratory or application tests. The salesman whose offering promises possibilities of added efficiency of cost saving is always assured of a full hearing, for on these topics the salesman and the Purchasing Department are on common ground.

*Factors in selecting process, alloy and supplier*

# How to Buy Aluminum Castings

**By Floyd A. Lewis**
The Aluminum Association
New York



**Typical aluminum alloy sand castings**

WITH some 2,800 foundries throughout the United States casting aluminum, buying aluminum castings might seem like one of the easiest things to do. Actually, it is a matter that may involve a number of headaches, because not all foundries are properly equipped to produce quality products. During periods of restricted metal supply, it is particularly important that castings be purchased from foundries that can make the most efficient use of available metal.

A good procedure to follow is outlined in the accompanying "12 Rules for Buying Aluminum Castings." The 12 steps are not always followed in exactly the order listed, and sometimes there is overlapping between two or more steps. But all of these points should be given careful consideration, especially if the castings involve any unusual features.

If the part to be cast is a simple one involving no special requirements nor high mechanical strength, the purchase is greatly simplified. Almost any foundry that can produce castings of good appearance may be selected. Any complications in the design or in structural or other requirements, however, must be given careful attention if difficulties are to be avoided. Except for the simplest parts, it is not wise to buy on the basis of bid price alone as any one of a number of possible difficulties may wipe out any apparent saving in purchase price.

The first thing the purchaser must do is to estimate how many units will be required, as this will largely determine the casting process to be used. He must then ascertain the mechanical and physical requirements that the part must meet, so that a suitable alloy can be chosen. These steps are closely interrelated because only certain alloys are adaptable to each of the various casting methods.

Other factors that will influence choice of casting process are the size and shape of the part, minimum sectional thickness, dimensional tolerances, surface finish, and relative machining and finishing costs.

### Choosing the Casting Process

About 90% of all aluminum castings now being produced are made by either the sand, permanent mold, or die casting processes. A comparison of these methods is given in Table 1.

In sand casting, a pattern of the required shape and size to produce the desired part is molded in sand, the mold being broken to extract the casting and the pattern being remolded for each unit produced. In permanent mold casting, the metal is poured in cast iron or steel molds which are so constructed that the mold may be opened and the casting removed. Any necessary cores are also made of cast iron or steel. Die castings also are produced in metal molds, or dies; but whereas in permanent mold casting the metal flows into the mold cavity by gravity, in die casting it is forced into the cavity under pressure. Both the dies and cores are

constructed of heat treated alloy steel.

Sand casting is the most flexible of the three methods and is generally employed for large or intricate castings and for castings of all types and sizes where the quantity to be produced will not justify the construction of a metal mold or die. Sand casting also is used for longer production runs of small and medium-sized parts of a design suitable to modern high-speed molding equipment where costs lower than for other methods can be established.

Both permanent-mold and die-casting processes are inherently mass-production methods. They are, therefore, particularly useful where large numbers of identical castings are to be produced. No specific lower limit can be established at which these processes become economical. Usually several thousand units must be required to make either process feasible, although as few as 500 have been produced economically in special cases.

In general, permanent mold castings have higher mechanical properties, greater uniformity, smoother surfaces, closer dimensional tolerances, and better pressure tightness than sand castings. By taking full advantage of these factors, castings made by this method will usually require less metal for the same design stress than sand castings. The smoother surfaces and closer dimensional tolerances mean lower machining and finishing costs.

Many designs that are too intricate to be produced from a practical standpoint by the full permanent mold process can be successfully cast using iron molds and sand cores. This combination results in what is known as the semipermanent mold method, extending the flexibility of the permanent mold process while retaining many of of its advantages.

Ability to cast thin sections, accuracy, uniformity of reproduction, and low unit cost characterize the die casting process. In reproduction of surface detail and surface finish, die casting is superior to any other method. The thinner sections possible with this method permit substantial savings in metal. The dimensional accuracy, smooth surfaces, and ability to cast threads and core holes contribute to minimum finishing cost.

Two basic types of die casting machines are in use—the so-called gooseneck and cold-chamber machines. In the former, air pressures up to about 750 psi are utilized; pressures ranging from about 3,000 to more than 20,000 psi, produced hydraulically, are employed in the cold-chamber machine. Because of the superiority of the castings produced at the higher pressures, gooseneck machines are gradually disappearing in favor of the cold-chamber units.

Sand castings weighing from a few ounces up to 1,500 pounds are commonly produced, and castings up to 7,000 pounds have been made by this process. Permanent and semipermanent mold castings from a few ounces to 300 pounds in weight are in regular production, but permanent mold castings weighing up to 500 pounds have been produced. For die castings, the weight range is from a fraction of an ounce up to about 20 pounds. Castings having over-all dimensions up to 36 by 12 by 9 inches are being produced, but the dimensions in one direction may exceed these; die castings up to 84 inches in length having been produced.

## 12 Rules for Buying Aluminum Castings

1. Carefully estimate the number of castings and rate of production required, so that the most economical casting method can be chosen.

2. Determine the mechanical and physical requirements of the part, so that the proper alloy can be selected, which will also be suited to the casting method.

3. Request bids from several foundries of good reputation that have the facilities and experience to furnish castings of the type desired at the required production rates.

4. Submit detailed drawings and a model or test pattern when available; if a reorder, submit sample casting as previously made.

5. Specify service conditions in detail, especially any points of high stress, or pressure tightness, if required. Indicate machining locating points.

6. Determine whether prospective suppliers have control equipment, inspection procedures, and laboratory facilities to assure the attainment of specified physical and mechanical properties consistently.

7. If the casting requires a high-strength alloy, determine whether prospective suppliers have adequate heat-treating equipment, with accurate temperature control.

8. If possible, investigate the experiences of other customers with prospective suppliers.

9. Before making final selection of supplier, visit him and see for yourself whether he has the sort of plant where you would like your castings to be made.

10. Don't necessarily give your order to the lowest bidder unless you are satisfied that he will produce good quality castings at the lowest over-all cost. Sometimes difficulties with machining and finishing and in adjusting rejects will wipe out apparent price savings.

11. After choosing your supplier, provide for the fullest possible consultation and collaboration between your design engineers and his technical personnel.

12. Give careful consideration to any changes the foundryman suggests that might simplify production, reduce costs, or result in better castings.

A few parts can best be produced by other methods, such as the plaster mold process, investment or "lost wax" method, and centrifugal casting. Parts requiring smoother surfaces and greater accuracy than can be obtained with any of the three principal processes may be successfully cast in plaster molds. Some of the intricate parts of automatic automotive transmissions which require great accuracy are being successfully produced by this method. The investment process is also capable of great accuracy and is sometimes used for very small complicated parts that can be produced in groups or clusters. Aluminum pipe is successfully cast by the centrifugal method, as well as a number of other parts of special character.

If the part to be produced requires the use of one of these specialized methods, it is best to discuss the problem directly with one or more of the foundries using the particular method in question. Since these foundries are relatively few in number, their selection is comparatively easy.

### *Selecting an Alloy*

After the casting method best suited to the design and production requirements has been determined, an alloy suitable for that method which will have the necessary properties may be chosen. Sometimes it is difficult to find an alloy that will have all the desired characteristics. Often the final choice will narrow down one representing the best compromise between two or more conflicting factors.

Commercial aluminum casting alloys in common use today are listed by A.S.T.M. specification numbers, the formulations containing various percentages of alloying elements such as copper, silicon, magnesium, zinc, nickel, manganese and chromium according to the characteristics desired. In Table II these alloys are grouped by the broad general types of application for which they are most suitable. Their mechanical properties are given in Table III, which also indicates the processes with which they can be used.

The first decision to be made in choosing an alloy is whether one not requiring heat treatment will provide the necessary mechanical and other properties, or whether a heat-treated alloy will be required. As shown in Table III, heat treatment increases the strength, but often lowers ductility. Die-casting alloys are not usually given any heat treatment except aging treatments at relatively low temperatures.

Although tensile strength is perhaps the most significant single mechanical characteristic to be considered, an alloy should not be chosen on the basis of that property alone. Yield strength, elongation, hardness, and compressive, shear, and fatigue strengths are other characteristics that may be significant in any application.

**Table I—Comparison Between Sand, Permanent-Mold, and Die Castings**

| | Sand Castings | Permanent-Mold Castings | High-Pressure Die Castings |
|---|---|---|---|
| **Strength** | 2 | 1 | 2 (a) |
| **Structural density** | 2 | 1 | 3 |
| **Reproducibility of successive castings** | 3 | 2 | 1 |
| **Pressure tightness (after machining)** | 2 | 1 | 2 |
| **Cost per piece (b)** | 3 | 2 | 1 |
| **Speed of production (b)** | 3 | 2 | 1 |
| **Flexibility as to alloys** | 1 | 2 | 3 |
| **Tolerances** | 3 | 2 | 1 |
| **Flexibility of design** | 1 | 2 | 3 |
| **Size limitation** | 1 | 2 | 3 |
| **Surface** | 3 | 2 | 1 |
| **Speed of getting into production** | 1 | 2 | 2 |
| **Pattern or mold cost** | 1 | 2 (c) | 3 (d) |
| **Thickness of section** | 3 | 2 | 1 |

Ratings 1, 2, and 3 indicate the relative advantages of the three methods for each factor, number 1 being the most advantageous.

(a) Thin die castings of uniform section may have first classification in the "as cast" condition.

(b) Although this rating covers the majority of castings, under average conditions, special factors may alter the rating; in some cases either sand or permanent-mold castings may take first place.

(c) The cost of permanent-mold equipment may be equal to or less than production sand-cast equipment for large or complicated castings adaptable only to these two processes.

(d) The cost of dies plus the cost of tooling for machining or finishing is frequently less than the same over-all cost for sand or permanent mold castings.

## Table II—Classification of Aluminum Casting Alloys by Type of Application

(Alloy designations are those of the American Society for Testing Materials)

| CLASS | Casting Method: Sand | Permanent Mold | Die |
|---|---|---|---|
| General-purpose alloys | C4A<br>CS43A<br>SC64B<br>SC64C<br>ZG61A | CS42A<br>SC64B<br>SC64C | S12A<br>SC54A<br>SC84B<br>SG100A |
| General-purpose alloys where pressure tightness is required | CS72A<br>S5A<br>SC51A<br>SG70A | CS72A<br>S5A<br>SC64A<br>SC51A<br>SG70A | SC84B<br>SG100A |
| Alloys for architectural and decorative purposes | S5A<br>G4A<br>GS42A<br>SG70A | S5A<br>GS42A<br>GZ42A<br>SG70A | G8A<br>S12A<br>SG100A |
| Alloys with high resistance to corrosion | S5A<br>S5B<br>G4A<br>G10A<br>GS42A<br>SG70A | S5A<br>S5B<br>GZ42A<br>SG70A | G8A<br>S5C<br>S12A<br>CG100A |
| Alloys retaining strength at elevated temperatures* | CG100A<br>CN42A<br>SC51A<br>SC82A | CG100A<br>CN42A<br>SN122A<br>SC51A<br>CS104B<br>SC122A | SC84A<br>SC84B<br>SG100A |
| Piston alloys | CG100A<br>CN42A | CG100A<br>CN42A<br>CS66A<br>SN122A<br>SC122A | SC84B |

*When service temperatures are above 600 F, die castings may develop surface blisters.

Attention must also be given to the casting qualities. For simple designs where high strength is not a factor, the casting qualities do not require any special consideration; but if the design is complicated or if the castings must be pressure tight, an alloy having good casting qualities should be used.

If the castings will be exposed to corrosive elements such as acids or salt water, then one of the alloys having high resistance to corrosion should be used. Machinability is a characteristic that should receive careful consideration for castings requiring considerable machining. While ease of machining and finishing is one of the outstanding characteristics of aluminum castings in general, some alloys machine easier than others.

Where the castings must retain their strength at elevated temperatures, such as those used in internal-combustion engines, one of the alloys possessing this characteristic must be used. Some engine parts require good resistance to wear in addition to high strength at elevated temperatures. Pistons, for example, require this combination of properties plus good casting and machining characteristics.

In applying the values given in Table III to an actual design, it must be borne in mind that those values are based upon tests made on carefully cast test bars. In some castings these characteristics may not be fully realized. For example, in castings involving thick sections the unit mechanical strength will be lower than that shown by the test bars, while in castings having thinner sections the unit mechanical strength may be higher than in the separately cast test bars.

Alloys containing copper and silicon, either singly or together, or in combination with smaller amounts of other elements, comprise the groups that are most widely used for the great bulk of aluminum casting production. In addition, these alloys cover a wide range of mechanical properties so that they are useful as well for some of the more specialized purposes.

The aluminum-copper-silicon alloys have better casting characteristics than the aluminum-copper alloys, but are not as resistant to corrosion as the aluminum-silicon series. The copper content provides strength and hardness while the silicon content improves the casting qualities and increases the resistance to corrosion. These alloys are particularly well adapted to casting work involving intricate design, having large differences in section thickness, or requiring pressure tightness. Excellent casting characteristics also are found in the aluminum-silicon alloys together with higher resistance to corrosion. For these reasons there is an increasing trend toward the use of aluminum alloys in which silicon is a major alloying element. Although the machining of these alloys is

**Typical aluminum alloy permanent mold castings**

more difficult than that of many other aluminum alloys, the problem is simplified by proper technique, tools, and lubricants.

Aluminum - silicon alloys are widely used in marine work because of their excellent resistance to salt water and salt-laden atmospheres. Although the aluminum-magnesium series is much more corrosion resistant, these alloys are not used so widely because of their difficult casting characteristics. By adding other elements, such as silicon or zinc, the casting properties are somewhat improved. The aluminum-silicon alloys, however, are superior in mildy acid solutions such as those found in the textile industry. Both series find extensive applications in the food handling and chemical industries.

Many special-purpose alloys have been developed for applications where characteristics such as ductility or electrical conductivity are desired. Their usefulness, however, usually is limited to the particular applications for which they are designed.

These special alloys have their place and should be specified when needed, but only when needed. The buyer will obtain castings of lowest cost by keeping his specifications as simple as possible. In other words, a heat-treated alloy should not be specified if a non-heat-treated one will do. An alloy having difficult casting characteristics should not be selected if one easier for the foundryman to handle will serve.

Informational booklets are published by practically all of the producers of aluminum alloys and these may be consulted for further details on any specific alloy.

### *Soliciting Bids*

The most important consideration in selecting bidders is the foundries' reputations as to consistency of quality and service. Foundries having considerable experience in producing the type of casting under consideration should be chosen. It is equally important to be sure that these foundries have the facilities to produce the castings at the required production rate.

Each bidder should be given a detailed dimensional drawing of the part and full information on service conditions. Both the total quantity and required rate of delivery must be specified for these are important factors in determining costs.

In preparing drawings, all surfaces to be machined should be clearly indicated as well as permissable dimensional tolerances. Close tolerances should be specified only where necessary. Dimensional tolerances can be held much closer in permanent mold than in sand castings while in die castings still closer tolerances are possible.

If a model or test pattern of the part is available it should be submitted to all bidders. When a reorder is under consideration, a sample casting as previously made should be sent.

Except where a pattern, mold, or die is already available, the buyer should be sure that bidders have adequate facilities for designing and producing such equipment. This is especially important if the part is to be made by either the permanent mold or die casting process. In any event, allowances must be made for shrinkage of the metal as it solidifies, for adequate draft so that either the pattern or the casting may easily be removed from the mold (depending upon which process is used), and for finishing where machined surfaces are required. In the interest of accuracy, the main machining locating points should be specified before the pattern, mold, or die design is determined.

Service conditions must be specified in detail in order that the foundryman may bid accurately on the production of castings that will meet those conditions. Any points of high stress should be specified, as well as pressure tightness if that is required. If the castings are to be used where corrosive influences are present, these conditions should be clearly and fully described. If temperatures at which the castings will function differ materially from ordinary room temperature, these must be clearly indicated. Aluminum alloys are stronger at low temperatures than at room temperatures, and lose some of their strength at elevated temperatures.

If any of the casting surfaces are subject to wear, these should be clearly indicated.

### *Some Questions to Ask*

Buyers should specifically determine whether the foundries have accurate temperature control equipment for proper handling of the metal, and whether they have inspection procedures and laboratory facilities to assure attainment of specified properties in the finished castings.

If the casting to be produced requires a high-strength alloy, the buyer should also satisfy himself as to the foundries' ability to perform heat treatment. Attainment of maximum strength in heat-treated castings requres that temperatures in

## Table III — Mechanical Properties of Aluminum Casting Alloys (Typical Values)

| | CONDITION[1] | | | | | TENSION[3] | | | COMPRESSION[6] | HARDNESS[3] | SHEAR | FATIGUE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alloy (ASTM Designations) | As-Cast | Annealed | Artificially Aged | Solution Heat Treated | Solution Treated & Aged | Yield Strength (Set = 0.2%) Psi. | Ultimate Strength Psi. | Elongation, % in 2 In. | Yield Strength (Set = 0.2%) Psi. | Brinell, 500-Kg. Load, 10-Mm. Ball | Shearing Strength, Psi. | Endurance Limit[5] Psi. |
| C4A | - | - | - | S | - | 16,000 | 32,000 | 8.5 | 16,000 | 60 | 24,000 | 6,000 |
| C4A | - | - | - | - | S | 30,000 | 40,000 | 2.0 | 38,000 | 95 | 31,000 | 7,000 |
| CG100A | - | S | - | - | - | 20,000 | 27,000 | 1.0 | 20,000 | 80 | 21,000 | 9,500 |
| CG100A | - | - | - | - | S | 30,000 | 40,000 | 0.5 | 43,000 | 115 | 29,000 | 8,500 |
| CG100A | - | - | P | - | - | 35,000 | 37,000 | 0.5 | 40,000 | 115 | 27,000 | 8,500 |
| CG100A | - | - | - | - | P | 36,000 | 48,000 | 0.5 | 36,000 | 140 | 30,000 | 9,000 |
| CN42A | - | S | - | - | - | 18,000 | 27,000 | 1.0 | 18,000 | 70 | 21,000 | 6,500 |
| CN42A | - | - | - | - | S | 25,000 | 28,000 | 2.0 | - | 75 | 24,000 | 9,500 |
| CN42A | - | - | P | - | - | 34,000 | 40,000 | 1.0 | 34,000 | 105 | 26,000 | 10,500 |
| CN42A | - | - | - | - | P | 42,000 | 47,000 | 0.5 | 46,000 | 110 | 31,000 | 9,500 |
| CS42A | - | - | - | P | - | 22,000 | 37,000 | 9.0 | 22,000 | 75 | 30,000 | 9,500 |
| CS42A | - | - | - | - | P | 26,000 | 40,000 | 5.0 | 26,000 | 90 | 32,000 | 10,000 |
| CS42A | - | - | - | - | P | 20,000 | 39,000 | 4.5 | 20,000 | 80 | - | - |
| CS43A | S | - | - | - | - | 14,000 | 19,000 | 1.5 | - | - | - | - |
| CS104B | P | - | - | - | - | 24,000 | 32,000 | 1.5 | 32,000 | 100 | 22,000 | |
| CS72A | S | - | - | - | - | 15,000 | 24,000 | 1.5 | 17,000 | 70 | 20,000 | 9,000 |
| CS72A | P | - | - | - | - | 19,000 | 28,000 | 2.0 | 19,000 | 70 | 23,000 | - |
| CS66A | - | - | P | - | - | 16,000 | 29,000 | 1.0 | 16,000 | 95 | 22,000 | - |
| G4A | S | - | - | - | - | 12,000 | 25,000 | 9.0 | 12,000 | 50 | 20,000 | 5,500 |
| G8A | D | - | - | - | - | 27,000 | 45,000 | 8.0 | 27,000 | - | 27,000 | 23,000 |
| G10A | - | - | - | S | - | 25,000 | 46,000 | 14.0 | 26,000 | 75 | 33,000 | 7,000 |
| GS42A | S | - | - | - | - | 13,000 | 20,000 | 2.0 | 15,000 | 50 | 17,000 | - |
| GZ42A | P | - | - | - | - | 16,000 | 27,000 | 7.0 | 17,000 | 60 | 22,000 | - |
| S5A | S | - | - | - | - | 9,000 | 19,000 | 6.0 | 10,000 | 40 | 14,000 | 6,500 |
| S5B | S | - | - | - | - | 9,000 | 19,000 | 6.0 | 10,000 | 40 | 14,000 | 6,500 |
| S5A | P | - | - | - | - | 9,000 | 24,000 | 9.0 | 9,000 | 45 | 18,000 | - |
| S5B | P | - | - | - | - | 9,000 | 24,000 | 9.0 | 9,000 | 45 | 18,000 | - |
| S5C | D | - | - | - | - | 16,000 | 30,000 | 9.0 | 16,000 | - | 19,000 | 17,000 |
| S12A | D | - | - | - | - | 21,000 | 39,000 | 2.0 | 21,000 | - | 25,000 | 19,000 |
| SC64A | P | - | - | - | - | 16,000 | 28,000 | 2.0 | 16,000 | 70 | 25,000 | - |
| SC54A | D | - | - | - | - | 24,000 | 40,000 | 5.0 | 24,000 | - | 26,000 | 22,000 |
| SC54B | D | - | - | - | - | 22,000 | 38,000 | 5.5 | 22,000 | - | 25,000 | 22,000 |
| SC84A | D | - | - | - | - | 25,000 | 46,000 | 3.0 | 25,000 | - | 29,000 | 19,000 |
| SC84B | D | - | - | - | - | 26,000 | 45,000 | 2.0 | 26,000 | - | 29,000 | 20,000 |
| SC64B | S | - | - | - | - | 18,000 | 27,000 | 2.0 | 18,000 | 70 | - | 10,000 |
| SC64B | - | - | - | - | S | 24,000 | 36,000 | 2.0 | 24,000 | 80 | - | 10,000 |
| SC64B | P | - | - | - | - | 19,000 | 34,000 | 2.5 | 19,000 | 85 | 24,000 | - |
| SC64B | - | - | - | - | P | 27,000 | 40,000 | 3.0 | 27,000 | 95 | - | - |
| SC64C | S | - | - | - | - | 18,000 | 23,000 | - | - | - | - | - |
| SC64C | - | - | - | - | S | 24,000 | 31,000 | 1.5 | - | - | - | - |
| SC64C | P | - | - | - | - | 19,000 | 26,000 | - | - | - | - | - |
| SC51A | - | - | S | - | - | 23,000 | 28,000 | 1.5 | 24,000 | 65 | 22,000 | 7,000 |
| SC51A | - | - | - | - | S | 25,000 | 35,000 | 2.5 | 29,000 | 80 | 30,000 | 8,500 |
| SC51A | - | - | - | - | S | 29,000 | 35,000 | 1.5 | - | 75 | - | 10,000 |
| SC51A | - | - | - | - | P | 27,000 | 43,000 | 4.0 | 27,000 | 90 | 30,000 | 9,000 |
| SC122A | - | - | - | P | - | 27,000 | 41,000 | 2.5 | 27,000 | 90 | - | - |
| SC122A | - | - | P | - | - | 26,000 | 40,000 | 0.3 | 26,000 | 97 | - | - |
| SC122A | - | - | - | - | P | 38,000 | 43,000 | 1.0 | 38,000 | 98 | - | - |
| SC82A | - | - | - | - | P | 40,000 | 49,000 | 3.0 | - | 97 | - | - |
| SC82A | - | - | - | S | - | 20,000 | 33,000 | 2.9 | 20,000 | 82 | - | - |
| SC82A | - | - | - | - | S | 28,000 | 36,000 | 2.0 | 28,000 | 81 | - | - |
| SG70A | - | - | S | - | - | 20,000 | 25,000 | 2.0 | 22,000 | 60 | 18,000 | 7,500 |
| SG70A | - | - | - | - | S | 24,000 | 33,000 | 4.0 | 24,000 | 70 | 27,000 | 8,000 |
| SG70A | - | - | - | - | P | 27,000 | 40,000 | 5.0 | 24,000 | 90 | - | - |
| SG100A | D | - | - | - | - | 27,000 | 44,000 | 3.0 | 27,000 | - | 28,000 | 19,000 |
| SN122A | - | - | F | - | - | 28,000 | 36,000 | 0.5 | 28,000 | 105 | 24,000 | - |
| SN122A | - | - | - | - | P | 43,000 | 47,000 | 0.5 | 43,000 | 125 | 27,000 | - |
| ZG61A | - | - | S[2] | - | - | 25,000 | 32,000 | 3.0 | 25,000 | 75 | 26,000 | 9,000 |

1. In these columns S denotes specimen cast in green sand; P denotes chill-cast specimen having properties similar to a permanent or semipermanent mold casting; D denotes die cast specimen.

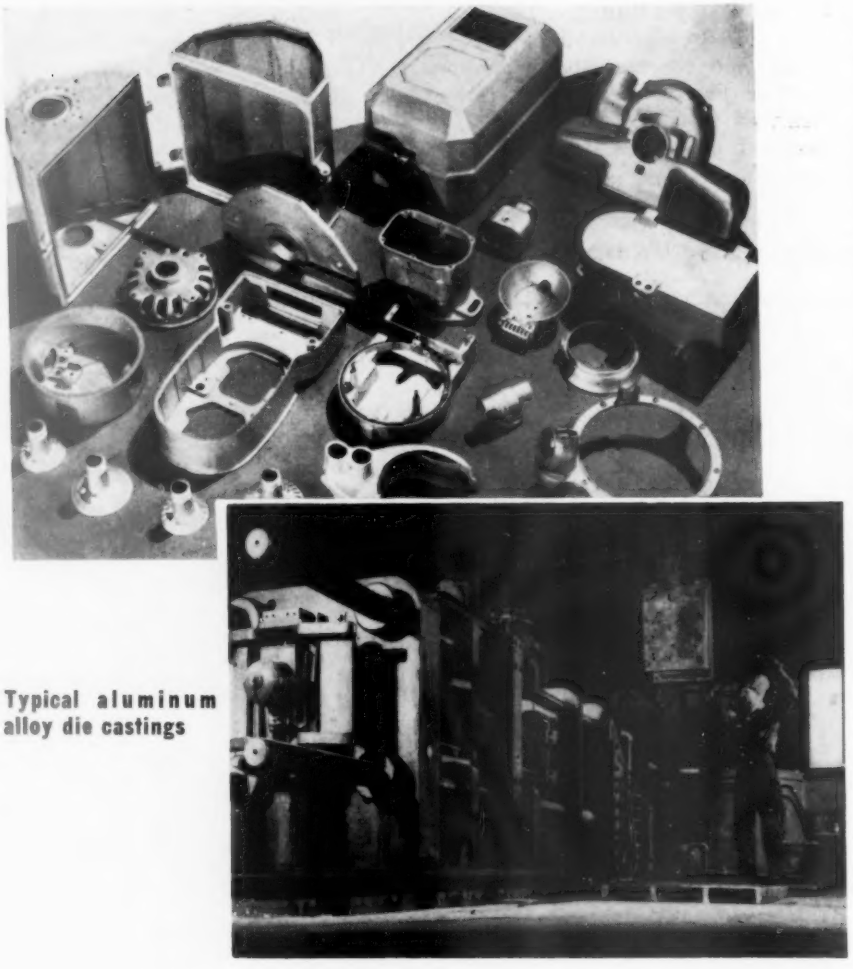
2. May be aged at room temperature, or artificially aged at higher temperature.

3. Tension and hardness values determined from standard half-inch diameter specimens individually cast in sand (S) and permanent (P) molds, and tested without machining off the surface. Tension values for die casting alloys determined from standard 1/4-inch die cast specimens (D); hardness values are not shown for die castings because they cannot be reliably determined.

4. Yield strength is the stress which produces a permanent set of 0.2% of the initial gage length (American Society for Testing Materials Standard Methods of Tension Testing).

5. Endurance limits are based on 500,000,000 cycles of completely reversed stress using the R. R. Moore type of machine and specimen.

6. Compression tests made on specimens having an l/r ratio of 12.



**Typical aluminum alloy die castings**

the heat-treating furnaces be held within close limits for specified lengths of time. Facilities for rapid quenching also are necessary.

One of the most important matters upon which the buyer should satisfy himself is whether the prospective supplier has a quality control set-up adequate to assure the production of good castings meeting the specifications consistently.

An appropriate quality-control program for a given casting will depend partly on the requirements the casting must meet. For example, some highly stressed castings such as those used for vital parts of aircraft must receive 100% X-ray inspection. Castings that are moderately stressed, where failure would not involve loss of life or serious interruption of work, would not require 100% X-ray inspection but would be produced under X-ray control. The more normal commercial castings which are under low stress and in nonstructural applications, however, require no X-ray control. A large majority of these castings are entirely satisfactory for their purposes if they meet reasonable visual inspection standards.

For castings that must be leakproof or pressure tight, a pressure test is necessary. This is made by sealing off the internal cavities or passages in a special jig and then introducing compressed air into the interior. After air pressure has been built up, pressure tightness is determined by either immersing the whole assembly into a tank of water or by applying a water-soap solution to the exterior. In either case, any leak will be indicated by bubbles appearing on the surface of the casting.

Some foundries are equipped for "chalk" or ultraviolet testing. The castings are first submerged in a bath of penetrant oil. After removal from this bath, the excess oil is cleaned from the surface of the casting. When the casting is thoroughly dry, chalk is dusted over its surface. Any oil remaining in cracks or voids that are open to the surface will darken the chalk in the areas where such imperfections exist.

The ultraviolet method is similar except that the penetrant oil contains a fluorescent dye and the castings after being coated with chalk are examined under ultraviolet radiation or "black light." Fluorescence of the oil brought to the surface by the chalk clearly indicates the location and nature of any surface discontinuities. These methods are rarely applied 100 per cent to castings in production. However, they are sometimes valuable in the development of proper foundry procedures for the production of certain types of castings.

Foundries with good quality control set-ups will usually be equipped to perform all of these checks, or at least will have facilities at their command for performing them when necessary, and a good quality-control program will be so set up that any production defects that crop up will be quickly remedied.

After a foundry has been tentatively selected, the buyer should ask to inspect the plant so that he can see for himself the equipment that would produce his castings and the conditions under which they would be made. Few reputable foundrymen will deny a prospective purchaser this privilege, and where it is denied the buyer should be especially cautious.

### Collaboration Valuable

Buying aluminum castings thus involves more than just getting several bids and ordering from the lowest bidder. Over-all cost should be the criterion and any indications of possible difficulties, such as in machining and finishing or in adjusting rejects, should be evaluated in determining actual cost of finished castings.

Finally, after a foundry has been selected, the buyer should provide for the fullest possible consultation and collaboration between his designers and the technical personnel of the foundry. This process should begin early enough so that any acceptable changes suggested by the foundry technical men may be incorporated in the final design.

Experienced foundrymen often can suggest changes that do not in any way impair the efficacy of the design or interfere with its proper functioning—yet will greatly simplify production, reduce manufacturing cost, or result in better castings. Reputable foundrymen will offer such suggestions purely in the interest of producing castings that will most economically meet the buyer's needs, and therefore the buyer should give such suggestions full consideration in preparing his final design.

*A buyer's-eye view of successful selling*

# Price Becomes Important after Quality and Service

This is an abstract of an address at a Sales Conference attended by 85 members of General Box Company's nationwide sales organization.

**By C. C. Watkins,** Director of Purchases, General Box Company, Des Plaines, Ill.

C. C. Watkins

THE Purchasing Department of the General Box Company is organized for one specific purpose—to supply each of our plants with the correct materials they require, delivered at the right time, and at the right price.

To obtain these results, the department consists of four sections, each devoted to the purchase of a major classification of materials—veneer and wire; lumber and major miscellaneous items; paper for corrugated; and stationery, forms, and other miscellaneous items. In addition to this Home Office staff, we have one man traveling in the South, visiting our raw material suppliers to check on quality, shipping dates, and to promote company good will. Also in addition to the General Purchasing Department personnel, each plant has a Purchasing Agent who handles local requirements.

There are a great number of years of combined experience represented in this purchasing organization. Our purchases in all of the major items are sizable enough so that our business is interesting to a large number of salesmen and we have had a lot of experience in talking with these salesmen over a good many years.

In thinking of salesmanship and selling, from the buyer's point of view, the first thing to remember is that the Purchasing Agent is just as much interested, if not more so, in establishing a good source of supply, as the salesman is interested in making a sale.

Many salesmen have an idea that a Purchasing Agent is a fellow who sits behind a desk and has nothing to do but say, "Your price is too high." Obviously, the Purchasing Agent has to be concerned about costs, and it may be quite true that a quoted price is too high—but not necessarily in the sense of competition among sellers. It may be that a price is simply too high for the service to which these materials are to be used, or too high to enable his own company's salesmen to maintain a good competitive position. Actually, the Purchasing Agent is continually thinking about ways to save his company money by improving the products that he buys or that his company makes, or by utilizing different products or materials to serve the same purposes more efficiently or economically. The successful salesman is the one who recognizes these purchasing objectives and helps the Purchasing Agent solve his problems.

We have listened to innumerable salesmen trying to sell us products that would in no way be beneficial to the General Box Company. Such salesmen were wasting their own time and ours, for the simple reason that they did not take the time or trouble, in advance of the call, to find out our type of business and what we could use, and did not even have the ingenuity to determine, before launching on the sales talk, what we use and how we use it.

Every Purchasing Department has the same responsibility and the same creed as ours—to obtain for its company the correct materials, delivered at the right time and at the right price.

It should be noted that in this creed, price is the last item mentioned among the three requirements; and while it is an important consideration, it is normally considered last, because price means nothing unless the material is correct and unless it is on hand when needed. If Purchasing Agents sometimes give you the opposite impression by talking of price first, let me assure you that the material itself and the ability to produce and deliver that material. are nevertheless of prime importance and have probably received prior consideration in the buyer's thinking. Otherwise the discussion of price is meaningless.

The salesmen we like to see come into our office are the ones who have made a study of our requirements, who are able to suggest and offer a correct material that will fit in with our needs, and who have a company behind them that will back up their statements and promises.

If the Purchasing Department has any constructive advice to offer salesmen, it is for you, as salesmen, to study and know your customers' requirements in the way of materials and deliveries. If you can meet those requirements advantageously, the price will usually take care of itself automatically.

# Purchasing for Cadillac's Cleveland

**By Stanley Bell**

**FRED S. PHILO,** a veteran of 19 years service with General Motors, is Manager of Purchases at Cadillac Division's Cleveland Tank Plant. He lined up a buying staff, equipment and parts suppliers, so expeditiously that production was rolling three months ahead of schedule.

**EDWARD M. REBOL,** whose youthful appearance belies his record of 18 years experience in the GM organization, is Assistant Manager of Purchases, the No. 2 man in a procurement assignment that started from scratch to become a major factor in the defense production program.

CONVERTING a big soybean warehouse into a heavy manufacturing plant, with a pressing time schedule to be met, is no small undertaking. Key to this accomplishment is an effective procurement program to bring in the necessary tools and machines and the hosts of other items essential to get into operation, and to set up the supply lines for the varied materials and components needed in the new product. This was the assignment handed to Fred S. Philo, Manager of Purchases, and Edward M. Rebol, Assistant Manager of Purchases, when the Cadillac Motor Car Division of General Motors Corporation moved into the old "Bomber Plant" on Riverside Drive, Cleveland, in August 1950 with a contract to produce 26-ton Walker Bulldog tanks. How well this assignment was handled is attested by the record, which shows that the first of the finished tanks rolled off the end of the production line in March 1951, three months ahead of schedule.

The building itself had to be completely rehabilitated. It was originally built for the assembly of light bombers; whereas the making of tanks is definitely heavy manufacturing. Consequently the building had to be strengthened and its utility capacity enlarged. To complicate matters, the plant was at that time being used by the Federal Surplus Commodities Corporation as a warehouse for soybeans—24 million pounds of beans, 159 carloads that had to be removed before the workmen could come in, along with several thousand tires and a 15,000-ton German press.

As plans were being formulated to get this work done in a hurry, Mr. Philo and Mr. Rebol, then constituting the "Purchasing Division", moved into the plant to start recruiting and organizing a purchasing staff and to establish supply lines for the manufacturing operation. During those first few weeks, it frequently happened that carpenters and plasterers were literally

# Tank Plant

**Before . . . .**

**August, 1950. When Cadillac moved in, the first job was to remove 159 carloads of soybeans that had been stored in the building.**

**. . . . and After**

**March, 1951. Just seven months later, the first of the finished tanks were rolling off the end of the assembly line, ready for action.**

building offices around them while they were interviewing potential assistants and vendors. Altogether, the Division was moved five times before eventually settling in its permanent location.

### *Recruiting a Staff*

The need for purchasing people was urgent, but not so urgent as to permit slipshod hiring. At the start of the operation, a carefully prepared personnel forecast was set up for the Purchasing Division. An outline of organization had been planned, with definite qualifications for the various positions. So insistent were the top purchasing executives that the people selected be expert in their respective fields, that the number of employes actually on the Division's payroll has consistently run below the originally budgeted number.

A look at the "anatomy" of the Purchasing Division reveals that it is composed of six sections, under the direction and supervision of the Manager and Assistant Manager of Purchases.

The Buying Section itself has three divisions, each headed by a Senior Buyer. Two of these are devoted to the purchase of productive materials and parts—any items which eventually become a part of the end product, the tank or gun respectively. Each of these Senior Buyers has four buyers assisting him and responsible to him. The third Senior Buyer, who has five assistants, handles all non-productive buying, including any items which are used in producing the tank or gun but which do not actually become a part of either.

Paper work from all three buying groups is processed in one Order Writing Section. This centralization of clerical functions, it has been found, makes for greater efficiency and better overall control of paperwork and records.

The Scheduling Section of the Purchasing Division works hand in glove with the Manufacturing Division to coordinate the flow of materials with manufacturing requirements and to establish proper float time. This section keeps the buyers constantly informed of the movement of the material they purchase, into and through the plant.

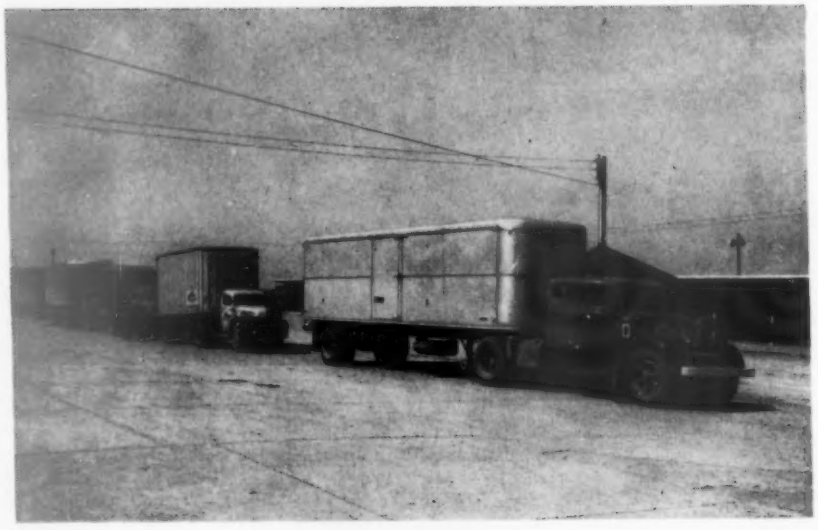
In the Expediting Section, fifteen outside expediters are employed. It is the function of these men to break up any bottlenecks they find in the field and to do anything and everything possible to keep materials flowing into the plant on schedule.

The duties of the Engineering section are to relay any changes in design, specifications, or manufacturing methods to subcontractors as soon as they are okayed by the Engineering Division and Ordnance officials.

Since many of the materials required are on the critical lists, and deliveries must be cleared with proper authorizations, the Priorities Section is often found burning the midnight oil, trying—and succeeding—in getting these essential materials into the plant when they are needed.

### *Establishing Supply Sources*

Even while personnel were being hired and trained in Cadillac meth-



**Coming . . . .**

Suppliers' trucks bring a continuous flow of vital parts and materials to the receiving docks.

**. . . . and Going**

The finished product—fast, rugged, versatile equipment for the nation's armed forces.

ods, the Purchasing Division was taking the first steps toward establishing vendor sources. The initial project was to stage a Procurement Clinic.

This clinic took place in September 1950, just a month after the plant had been taken over. The building was still half full of beans and the Division was short of personnel. In the absence of an actual model of the new tank, a vehicle similar to the Walker Bulldog was secured from the Detroit Arsenal, brought to the Cleveland Tank Plant and completely dismantled. Each individual part and assembly was put on display, and potential suppliers were invited to examine the parts which were to be produced.

During the four-day period of the clinic, more than 800 manufacturers examined the parts they felt they might be able to supply. Approximately 200 of these were found who could give real assistance. The 600 potential suppliers who did not then fulfill all the Cadillac requirements were not forgotten; facts about their facilities were catalogued for later reference and study, and eventually many of them became Cadillac suppliers.

Another advantage realized from this clinic was that it gave, indirectly, the opportunity of doing defense work to more than 2,000 small businesses in the Greater Cleveland area. A great many of these small businesses became subcontractors for Cadillac's prime contractors. To this end, as many as 300 salesmen a day were interviewed during these formative days of the purchasing operation. Altogether, over 5,600 potential sources of supply were investigated and catalogued by the time the first tank rolled off the line on March 27, 1951, three months ahead of schedule.

### *Working with Suppliers*

Besides building up a highly effective organization of its own, the Purchasing Division has taken on added responsibilities, on its own initiative, which have contributed substantially to the success of the purchasing program.

As an example of this, the voluminous files of supplier information accumulated in the Purchasing Division have been put to use by subcontractors engaged in supplying parts for the Bulldog, thus improving their own service to Cadillac. Through a unique direct-by-mail system, Cadillac has been able to assist many of its suppliers in finding the steel or other materials they need for their operations. Moreover, these data have been of considerable value to other members of the "light tank family". They frequently come to Cadillac for advice in locating scarce raw materials or sources for special parts similar to those used in the Walker Bulldog.

Many instances of this sort could be cited. In a typical case, one of Cadillac's sub-contractors in Kalamazoo, Michigan, had scoured the East Coast and Middle West for certain steel he needed, but with no success. Finally he appealed to an Army Ordnance official in Washington, who referred him to the Tank Plant. The Purchasing Division got out their files and went to work. Within hours, a source was located and the needed steel was on its way.

Sometimes the circumstances are a little more complicated, and more dramatic. For example, an urgent need arose for a forging—"Support, engine compartment, grill door, left" —normally supplied by a Lansing, Michigan, vendor. An expeditor, with headquarters in Detroit, was dispatched to Lansing to find the

trouble and correct it. He found that the vendor had been delayed in turn by a shortage of armor steel. He had all the necessary priorities, but that didn't take the place of metal. Expeditors in other areas were alerted, and one of them quickly located some armor steel in Buffalo, N. Y. To be sure, it wasn't the right size—3-1/16″ round instead of 2-7/16″ round corner square—but it could be used. The holder of the vital steel agreed to ship it to the Lansing vendor as soon as it could be loaded on a truck. So far, so good. Then one of the worst storms in years struck the area, the roads became icy, and more precious hours were lost. In spite of these difficulties, the job was put in the hammer promptly on arrival, four hours later than the scheduled time, and the forgings were turned out in time to forestall what would otherwise have been a serious production delay at the Tank Plant.

As suppliers became aware of this unusual service, more and more of them have come to Cadillac for help in ferreting out odd-item lots of scarce steel and other materials, often in small quantities. The incidents recited above are small in themselves, but, multiplied by scores, they are indicative of the lengths to which the Purchasing Division will go to keep materials flowing and to insure steady production.

### Cost Reductions

Merely securing materials is not enough. Getting them at the right price is also an important factor. For many of the items purchased, there is no precedent to establish proper costs, but by working closely with suppliers, some substantial cost savings have been achieved.

In order to effect cost reductions as early as possible in the program, a thorough screening of all subcontractors was inaugurated early in 1951. A careful study was made of each supplier—his delivery performance up to the time the survey was begun, the quality of his product, the type of plant he was running, his operating costs and the prices he was charging.

In a number of cases, it was found that Cadillac engineers were able to help subcontractors improve production techniques, tooling, and processing, with resulting lower costs. In addition, it was correctly assumed that although initial lot costs might legitimately be high, suppliers ought to be able to reduce costs progressively as a result of knowledge gained in their own manufacturing experience. Systematic review and cooperative analysis have shown this to be the case, and the cost benefits of this experience are shared by the producer and the purchaser.

### Four-Point Philosophy

The underlying philosophy of the Purchasing Division can best be summarized in these four points:

1. The Division's primary function is to establish and maintain good working relations with sources of supply which can meet quality and delivery requirements and offer the lowest prices consistent with good workmanship.

2. Once a supplier has been established as a source of supply and his operations on behalf of the Tank Plant have been standardized, the Division must work with him and endeavor to secure from him

(*Please turn to page* 358)

**Test run. The Bulldog tanks move directly from the assembly line to the proving ground behind the manufacturing building for a 50-mile shakedown test over difficult terrain.**

**Portrait of power. This is the 26-ton Walker Bulldog light tank produced at Cadillac Division's Cleveland Tank Plant.**

*How soon may the buyer expect shipment?*

# A Sale for "Immediate" Delivery

. . . . The normal order must be shipped within a reasonable time; the order requested as soon as possible must be sent more promptly

**By Albert Woodruff Gray**

DELIVERY specifications in sales contracts in such indefinite terms as "immediate", "as soon as possible", "within a reasonable time," beget the confusion and misunderstandings that nurture lawsuits and the loss of both profits and good will.

Delivery specified for a named date requires no interpretation by courts. "Immediate" delivery suggests the opening sentence of a young lawyer arguing his first appeal: "The law as I understand it, is an exact science." The grey haired chief justice, long inured to the uncertainties of that law, leaned across the bench. "Counsellor," he said gravely, "would you mind quoting your authorities?"

### Circumstances Determine What Is Reasonable Time

A dealer in pipe fittings at Seattle, Washington, received a telephone inquiry of the time necessary for the manufacture and delivery of heavy cast steel pipe fittings. He replied that a portion of the fittings mentioned could be delivered immediately and the remainder within approximately thirty or forty days.

The order for the fittings, given over the telephone, was confirmed by a printed confirmation dated that day, but made no reference to the delivery date. Seven weeks later the purchaser cancelled the order for whatever fittings were still undelivered. Some had already been delivered, others were en route, and a small portion still in the process of manufacture were scheduled for shipment on or before the end of the following week.

The dealer sued to recover his loss from the cancellation of the order. The purchaser set up as a defense that the goods had not been delivered within a reasonable time. In its decision awarding damages to the dealer, the Supreme Court of that state said:

"The order was a written contract in which no time for the delivery of the goods was specified, hence the seller was required to deliver them within a reasonable time. Where by a contract to sell or a sale the seller is bound to send the goods to the buyer but no time for sending them is fixed, the seller is bound to send them within a reasonable time. The rule which needs no citation of sustaining authority is that what is a reasonable time is to be determined from all the circumstances.

"One of the circumstances in this case was World War II, in which all our resources were employed. Another circumstance, of which the court may take judicial notice, was the manufacturing and labor situation during 1944. Everything required to be done expeditiously to manufacture and deliver these fittings was done."

These pipe fittings were being delivered within a reasonable time or, as it was recently defined by a Maine court, "Such time as is necessary conveniently to do what a contract requires should be done."

### Best Performance Required

When it is stipulated that delivery shall be immediate or as soon as possible, the time must be measured by this legal yardstick and delivery and shipment made within a somewhat shorter time than the period defined as reasonable.

In a famous English case a seller agreed in July to manufacture what was described as a "gun", a part of a machine the buyer had contracted to deliver to a customer by the end of the following month, which was known to the manufacturer. The contract here provided for delivery as soon a possible.

Holding the manufacturer liable for a failure to deliver as agreed the court said, "By the words 'as soon as possible' the manufacturer must be taken to have meant that he would make the gun as quickly as it could be made in the largest establishment with the best appliances. The surrounding circumstances must be looked at and they plainly show that the purchaser required the manufacturer to supply the gun as quickly as it could be supplied if the manufacturer was provided with all proper appliances."

Here the delay that justified this decision against the manufacturer was the consequence solely of the manufacturer's lack of competent workmen.

This decision was adopted as the principle governing the interpretation by a Missouri court of the shipping instructions "at once or as soon as possible" for the delivery of a tractor engine to a farmer during the threshing season.

The buyer in this instance gave a dealer the written order on June 30th, "We hereby order from you the following—a ten horse-power tractor engine, to be second hand, in good order and to fill the bill the same as any as to working quality; to be delivered on board cars at your factory by the route you think best and cheapest at once or as soon as possible, on or about July 1st, or as soon thereafter as possible."

### Too Late for Use

The order was received by the dealer on July 2nd, but the engine did not reach the purchaser, a distance of 28 miles, until two weeks later, when the buyer refused to receive it. Later, when the dealer sued to recover the price of the engine, the buyer maintained that the delay in shipment had been unreasonable and his refusal to accept the engine under the circumstances justified under the circumstances.

"The dealer was advised of the importance to the purchaser of the greatest expedition in forwarding it," said the federal court, holding the dealer had by this delay forfeited his right to recover. "He must have known as a manufacturer engaged in the business of selling such machines for the harvest in Missouri, that the season for threshing begins here about the last day of June or the 1st of July, in addition to which the letter of June 30th accompanying the order for the machine urged immediate attention.

"Knowing as the dealer did that such machines were brought for use in the beginning and flush of the threshing season, this fact indicated that the time was of the very essence of the contract and that the terms at once or as soon as possible meant at the earliest moment of time practicable to meet the purchaser's object in making the order.

"Here there was a period of over two weeks after the order was given and twelve days after the dealer received it, before it was executed. This was not in the language of the authorities within a reasonable time with an undertaking to do it in the shortest practicable time."

### Buyer Refuses Shipment

In another instance of this character the buyer asked the price of several varieties of sewer pipe with the earliest possible delivery date. The dealer said he had all the articles on hand with one exception and he "could make immediate shipment on receipt of order." The item which was not on hand was but one of the 32 articles specified.

The order for these goods was given on November 19th and on it was written, "Shipment—earliest possible." Part of the pipe was delivered on November 27th but the greater portion was not shipped until December 28th, 39 days after the order had been placed.

In deciding the lawsuit brought for this delay in the filling of an order that specified, "shipment—earliest possible", the court said that, "When a specific date for delivery is mentioned in the contract the goods must be delivered on that date and in case of failure the purchaser usually may refuse to accept a subsequent offer to deliver. In ordinary cases of sales where no specific time for delivery is mentioned in the contract, delivery must be made within a reasonable time after the making of the contract.

"What constitutes a reasonable time usually depends upon the circumstances of the particular case, such as the parties may be supposed to have contemplated in a general way when making the contract. The requirement of the purchaser that the shipment of the goods should be the earliest possible must be considered as meaning that the goods should be sent as soon as the seller could possibly send them and signified rather more than that the goods should be sent within a reasonable time."

### Three Weeks Is Not At Once

A manufacturer wrote a customer asking the acceptance of a 90-day draft and that in return for the acceptance the merchandise would be shipped at once. The draft was accepted. Three weeks later the purchaser told the bank it would not pay this draft as the maker had not shipped the goods "at once" as he had agreed.

In its decision of the action brought for the amount of this draft the court said of the phrase, "at once" in relation to the delivery of goods, "The letter plainly and unequivocally stated that in consideration of the acceptance of the draft the merchandise would be shipped at once. This did not mean that it would be shipped within a reasonable time but that the shipment would be made with greater celerity than is ordinarily comprehended by a resonable time.

"It implies that the shipment would be made simultaneously with the acceptance or at least with the receipt of the advice that the draft had been accepted. 'At once' is controvertible with 'prompt', 'forthwith'. These terms in their ordinary acceptation mean 'at the same point of time', 'immediately without delay', 'at once and the same time', 'simultaneously', 'directly'."

### A Classic Precedent

A more extreme interpretation of words requiring an earlier delivery than demanded by the phrase "reasonable time" was made by the highest appellate court of New York state many years ago and still stands as an outstanding authority in rela-

## REFERENCES


Palmer Supply Co. v. Time Oil Co., 178 Pac. 2d 737, Washington

Franklin Paint Co v. Flaherty, 29 A. 2d 651, Maine

Hydraulic Engineering Co. v. McHaffie, 4 Q.B.D. 670, England

Robinson v. Brooks, 40 Fed. 525, Missouri

Robinson Clay Products Co. v. American Locomotive Co., 107 N.Y.S. 69, New York

Tobias v. Lissberger, 12 N.E. 13, New York

Mechem on Sales, sec. 1134, page 975

tion to this phase of the law.

This contract provided in part, "Sold to Mr. L. Lissberger, New York, for account Mess. C. Tobias & Co., New York, about one hundred (100) tons old iron rails for prompt shipment from Europe***."

These rails were loaded onto an ice bound vessel on a river at Stettin, Germany, forty miles from the open sea, where she lay until the river became open for navigation two months after the order had been given. The price of rails in this country, in the meantime, dropped. When the goods were finally offered for delivery their value was considerably less than it would have been with delivery by "prompt shipment" as agreed.

Holding the sellers had failed to deliver as agreed and not entitled to recover, the New York Court of Appeals said, "The contract provides for prompt shipment. This implied expedition and admits of less delay than would be permitted under a covenant to act merely within a reasonable time. Prompt is synonymous with quick, sudden, precipitate. Indeed, one who is ready is said to be prepared at the moment, when he is prompt he is said to be prepared beforehand. It was not a prompt shipment and the buyer was not bound to receive the cargo."

Of these words and phrases specifying the time for delivery one legal authority writes,

"Instead of leaving the law to imply the time of delivery the parties may determine or attempt to determine it by their contract. In choosing the language to express their agreement or in making the agreement itself, they may have a definite date in mind or merely ideas expressive of speedy delivery. They may therefore declare that the delivery shall take place 'as soon as possible', or 'forthwith', or 'immediately', or 'on' or 'by' or 'up to' or 'about' a certain day, or 'within' a given time or 'before' a given date.

"All of these terms require consideration and as to such terms as 'forthwith', 'immediately', 'as soon as possible' and the like, it must be constructed in view of the circumstances of the case and the situation of the parties. Each of these expressions may be somewhat indefinite in meaning and they are all expressive of promptness to a greater degree than would ordinarily be indicated by such a phrase as 'reasonable time', though under peculiar circumstances they may mean no more."

# Cut Your Printing Costs

**By David Markstein**

H. N. Cornay
Printer—Planner

PRINTING costs, like other costs, have been rising as paper and skilled printing labor get more expensive. Yet it's possible to cut worthwhile amounts off most printing bills if a job is planned right from its inception. Authority for this statement is a printer with thirty years' experience—Harold N. Cornay of New Orleans, president of one of the South's largest fine graphic arts plants.

"Planning each detail in advance, from the start rather than midway, can whittle goodly percentages off the costs," says Mr. Cornay. "And these percentages can mount into many dollars on even a moderate sized job."

To illustrate how advance job planning can cut final costs, Mr. Cornay cited two recent jobs which were very similar. "On one of these, we had opportunity to apply this advance job planning technique which we feel is so important. On the other we did not. On this second job, the customer called on us only after his own people had already progressed pretty far. They had set up the size, and had already paid for production of the art work on the job. All we could do was to follow instructions.

"On the first, our pre-planning system went into work while the job was still an idea. By suggesting a slightly different paper size—only a half inch shorter in one dimension—we were able to get full utilization of standard size stock. The art work was planned to fit. It became possible to do the job on a single press run instead of two, and this saving alone mounted to about 40%."

In production planning, the most minute details are worked out—not only the day, but the hour, when a certain run will go on a certain press. Use of electros, pre-registering and make-ready so as not to tie up expensive equipment in these steps, are specific considerations on every job. This conservation of manpower and equipment time, fitting the job to the press and the stock on which it will come out most economically, can usually be done only when the buyer and printer work together.

"I tell buyers of printing that doing too much work before the printer is called in can be something like laying a foundation and then summoning an architect to build a structure on top of it. If they call the printer in early, he can save them money. Maybe the foundation is ten times too elaborate for the structure they have in mind. And maybe the planning involves costs that are totally unnecessary," says Mr. Cornay.

"Many of the buyers know paper stock and standard sizes. But the printer is in a position to know of unusual sizes available from one mill or another. He is in constant touch with local paper merchants. He may know a stock that can make a punchy impression, that the buyer isn't aware even exists.

"But most important, he knows his equipment. And if a press runs only 65% of its capacity, the cost of running it is exactly the same as if it were turning out 100% of what it is capable. The wasted 35% in a case like that can run up to a substantial figure on the buyer's bill."

# A Century of the Mercury Market

## . . . the "liquid metal" of many uses is as unique in its economic behavior as in its physical characteristics

Photographs by courtesy of The Cordero Mining Company, Hartford Electric Light Company, and Thompson Products, Inc.

Typical mercury producing property in the western United States. Seventy-five years ago this country produced more than half of the world's mercury; today our production is less than 10% of the total and the great bulk of our requirements is imported.

**By James B. Lawrence**
Bethlehem Apparatus Company
Hellertown, Pa.

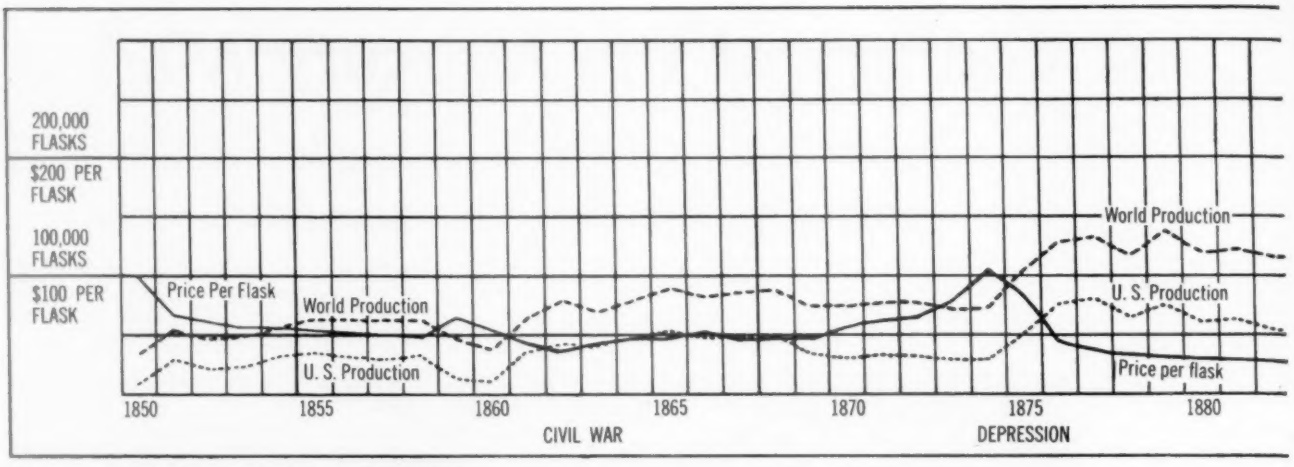
**THE AUTHOR** is an engineering graduate of Lehigh University and worked in the production department of Bethlehem Steel Company before coming to his present position. A specialist in mercury purification for industrial processes and applications, he has been a frequent contributor to technical journals and the publications of the American Chemical Society.

MERCURY occupies a curious niche in world economics. In its metallic state no metal can be substituted for it, nor can it substitute for any other metal. Because of its unique properties, there has occurred in the past 25 years, a prolific development of new and important uses. These include: a heavy increase in all types of scientific and industrial control instruments; switches; lamps; rectifiers; the mercury boiler for generating power; and the recently developed frozen mercury casting process.

One would naturally assume that in view of the great extension in uses, demand for the metal would have caused a great increase in production. Surprisingly, this is not true. The long-range production curve does not show the rising tendency exhibited by practically all other commodities. As an illustration of this, if we consider the production for the years 1948-50, we find that the total is even less than for the years 1878-80. During this same seventy-year period production of lead increased four-fold, while both iron and copper increased some fifteen-fold.

The fact is that not until World War I did mercury become consistently an industrial commodity, subject to the same market trends and fluctuations as other commodities. Referring to the first sixty years shown on the accompanying chart, it can be seen that the price did not react to wars, depressions and periods of prosperity. The great rise in commodity prices during the Civil War left mercury unaffected, while a high peak in the price occurred, strangely enough, in the depression year 1874.

Prior to the first world war the principal use for the metal was in gold and silver mining, with mer-



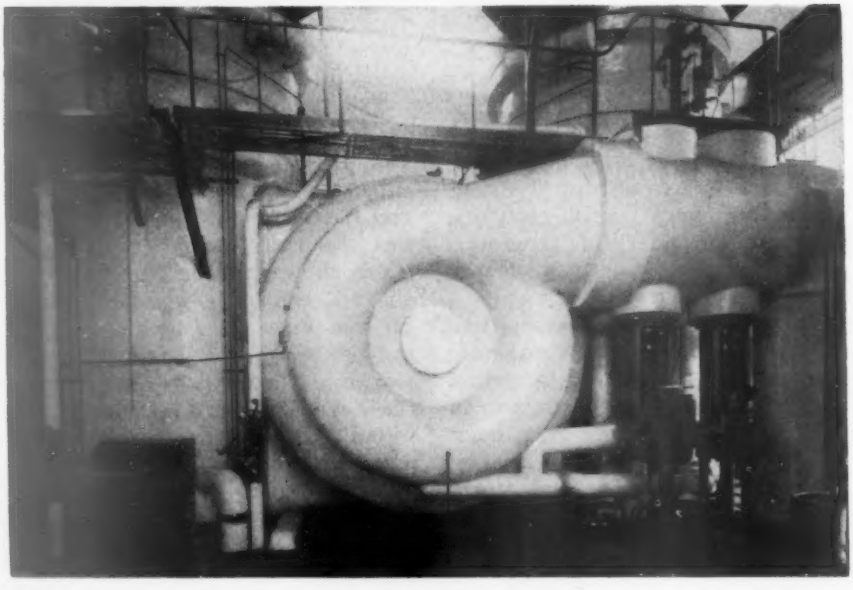

**Mercury Production and Prices, 1850-1951**

## USES OF MERCURY

U. S. Consumption (in flasks of 76 pounds)

| | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | 1948 | 1949 | 1950 |
|---|---|---|---|---|---|---|---|---|---|---|
| General Laboratory | 175 | 294 | 360 | 265 | 309 | 269 | 333 | 442 | 345 | 646 |
| Amalgamation | 225 | 180 | 24 | 29 | 183 | 99 | 138 | 143 | 165 | 192 |
| Mercury Cells | 155 | 549 | 691 | 657 | 632 | 550 | 693 | 806 | 755 | 1309 |
| Dental | 959 | 2078 | 1416 | 1502 | 2053 | 2023 | 1535 | 2014 | 2023 | 2678 |
| Control Instruments | 4731 | 6679 | 6624 | 6629 | 8150 | 7439 | 7774 | 8953 | 8376 | 9235 |
| Electrical | 5046 | 5530 | 4144 | 8152 | 26008 | 4779 | 7513 | 7491 | 8383 | 12269 |
| Agricultural | 1968 | 1533 | 1632 | 3930 | 2863 | 3134 | 5617 | 7048 | 4667 | 4504 |
| Pharmaceutical | 20296 | 8088 | 14563 | 8358 | 11133 | 4095 | 3047 | 3382 | 3443 | 5996 |
| Misc. Chemicals | 7645 | 12538 | 11747 | 9093 | 6448 | 4986 | 6361 | 4699 | 4342 | 6165 |
| Redistilled & Other | 3600 | 12231 | 13299 | 4285 | 6121 | 4178 | 2570 | 11275 | 7358 | 6221 |
| TOTAL | 44800 | 49700 | 54500 | 42900 | 63900 | 31552 | 35581 | 46253 | 39857 | 49215 |

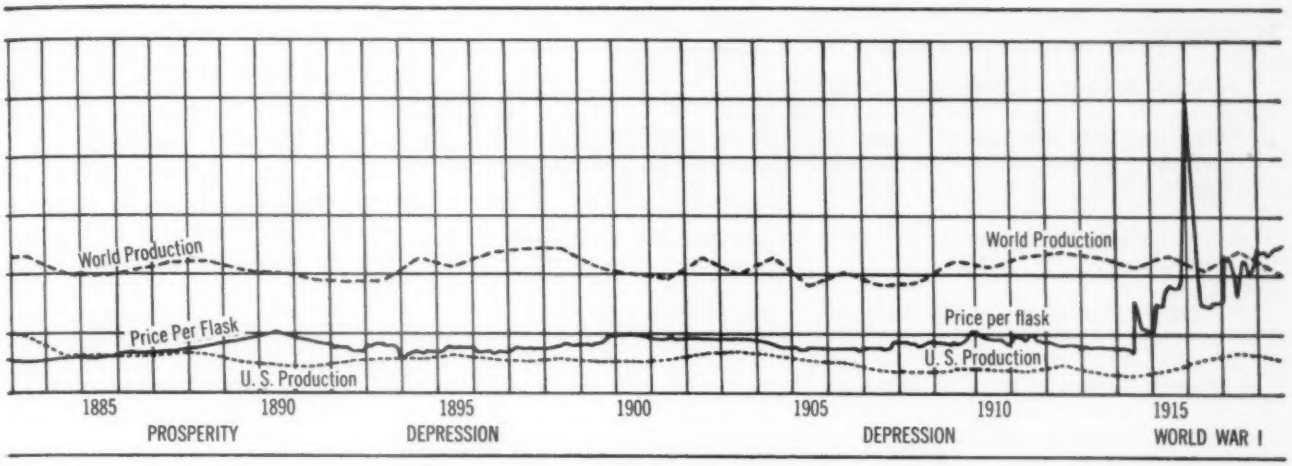
Electrical applications account for the greatest single use of mercury today. This 15,000 kw. mercury turbine is in operation at the South Meadow Station of the Hartford (Conn.) Electric Light Company.

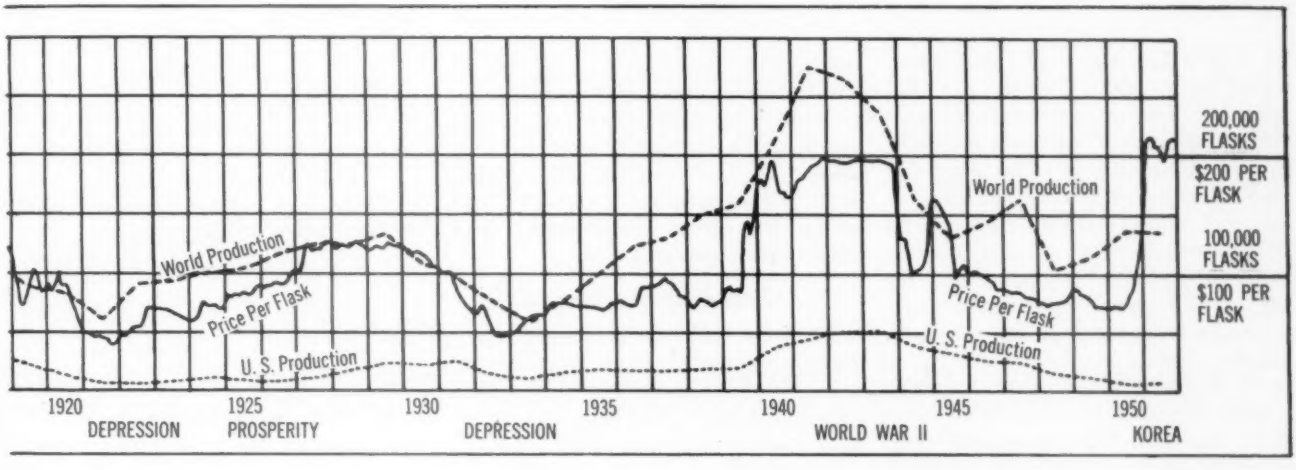


cury oxide as a pigment an occasionally important factor. The United States did not begin to produce mercury until the discovery of gold in California in 1848. Then the great demand for mercury, for gold extraction, in a few years made the United States the world's largest producer. In the succeeding thirty years our production was nearly equal to the combined output of the two chief rivals, Spain (Almaden) and Austria (Idria). This situation is in sharp contrast to our present status, when we are producing less than 10% of the world's total.

The first violent fluctuations in the price of mercury occurred in 1915, when it rose to its peak of $283 a flask. This was attributed to speculation, and was quickly followed by a sharp drop. During 1917 and 1918 the price was fixed by Government purchases at $105 a flask. The United States and its allies bought 40% of all the mercury available in this period. These high domestic prices caused an increase in our own production but no increase in that of the world, since both Austria and Spain decreased production, the former an enemy country, and importations from Spain being cut by shipping difficulties. In 1921, a year of depression, both price and production declined, rising again during the period of "Coolidge Prosperity", only to drop to new lows in the depression of the early thirties.

World War II resulted in a sustained, but artificial, period of high prices, being pegged at $191 a flask. World production reached an all-time high of 275,000 flasks in 1941, with a value of about fifty million dollars. Since Spain and Italy (which now included the previously Austrian-owned mine at Idria) were




selling their product to the Axis, the Allies had to depend upon sources in the Western Hemisphere. Our own production rose to 52,000 flasks per year, higher than it had been since 1882. Mexico contributed heavily; and Canada, not a producer at all for the previous forty years, during the war mined 55,000 flasks. This stopped abruptly at the end of 1944. At the beginning of the year 1944 our Government cancelled its purchasing contracts and the price dropped to one-half.

The price hump of 1945 is attributed solely to the development of the new dry cell, which it is stated consumed more mercury than all other uses combined. The end of the war in 1945 brought into the market accumulated stocks from both Germany and Japan, initiating a price decline which continued until the outbreak of the Korean War. This war brought about another spectacular price increase, to a level which has been sustained for more than a year.

Mercury is particularly susceptible to control by cartels because it cannot be replaced by substitutes, and it is produced in substantial quantity in relatively few localities. The Rothschilds long controlled the Spanish output and after the first world war the Italian as well, representing about 58% of world output. In 1905, the California mines formed a pool in order to benefit from tariff protection by maintaining a high domestic price while exporting at lower prices to foreign consumers, principally China, Canada, Mexico, and Japan. In 1911, the Rothschilds began selling heavily in the American market and caused breakup of the pool.

In 1921, the Rothschilds' contracts with the Spanish Government were not renewed, and these governments, by 1928, had formed their own cartel, the Mercurio Europeo, which, although interrupted by the Spanish civil war, the Italo-Ethiopian war, and World War II, was maintained until the beginning of 1950, when it was reported as having ended.

American producers from the beginning have been protected by import duties which up to 1889 varied from 10% to 20%, and were then set at 10¢ per pound. In 1894 this was raised to 25¢ a pound, at which figure it still stands. The sharp drop in price at the beginning of 1894 reflected a rumor that this duty would be removed, an event which did not occur.

### *Table of Uses*

A study of mercury uses for the last ten years shows a pronounced upward trend in its employment in electrical apparatus, industrial and control instruments, and dental and general laboratory purposes, which is reasonably uniform except in the case of electrical apparatus for the year 1944, and especially 1945, when the mercury dry battery demanded excessively large quantities. In the last few years there have been many electrolytic cells installed, possibly stimulated by German and Italian improvements in such apparatus. The use of mercury for this purpose has therefore increased.

Mercury for amalgamation represents such a small proportion of the total that it is hardly worth listing, a strange contrast with the situation

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1. *Bureau of Mines Minerals Yearbook;* 1932-1950
2. Egleston, T., *The Metallurgy of Silver, Gold and Mercury of the U. S.;* John Wiley and Sons; London, England; Vol. II, pp 799, 901; 1890 (start of mercury mining in the U. S.)
3. *Engineering and Mining Journal;* Vol. 153; p 97; February, 1952. (1951 monthly price figures).
4. *Kingzeth's Chemical Encyclopedia;* 6th Edition; p 1028, (describes vermilion substitutes).
5. *Minerals Resources of the U. S.;* 1882 and 1883.
6. *The Mineral Industry;* Vol. 1-50; 1892-1941.


in the early days of production when such use accounted for the principal part of the total demand. "Pharmaceuticals" showed a heavy consumption during the war for medical purposes, a sharp drop at its end and renewed interest in 1950, probably due to the Korean war. "Miscellaneous chemicals" do not exhibit any particular trend since the war, the high figures during the course of the war being a result of the heavy consumption for fulminate and anti-fouling paint for ships' bottoms. The pronounced increase of 1948 and 1949 for "Other" can largely be attributed to the accumulation of stocks of the metal for three mercury boilers which began operation in 1949.

An interesting fact to be gathered from the table is that while the metal in its various compounds (mercurials) was the predominant use up to the end of World War II, the greater bulk since that period has been used in its metallic form. Contributing factors to this situation are: the tendency for substitution by sulpha drugs and penicillin for mercurial drugs; replacement of fulminate by substitutes such as lead azide, and vermilion by red lead plus eosin; and, on the strictly metallic side, the expansion of industry demand for control instruments and electrical apparatus.

### Changing Standards

During the earlier production period, when the use of mercury was predominantly for extraction of gold and silver and for pigments, cleaning of the metal was not considered of enough importance to warrant its being carried out with extreme thoroughness. Following the development of scientific instruments and industrial control apparatus, however, as well as other exacting uses which depend more upon physical than chemical characteristics of mercury, it became imperative to perfect methods of purification. These include vacuum distillation, acid washes, electrolytic processes, and the recently developed and more efficient Bethlehem oxifiers and gold-adhesion filters.

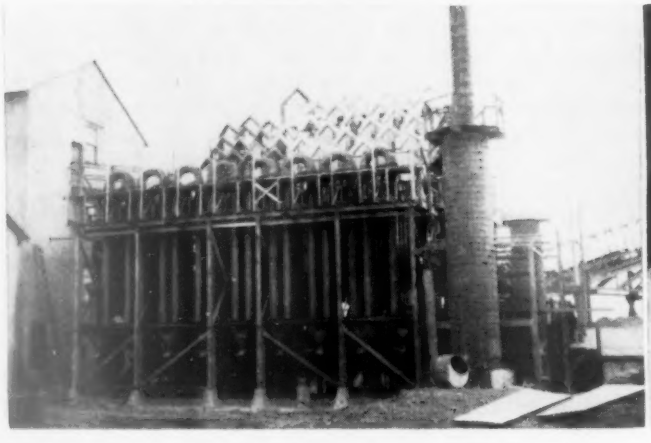
### New Sources of Mercury Supply

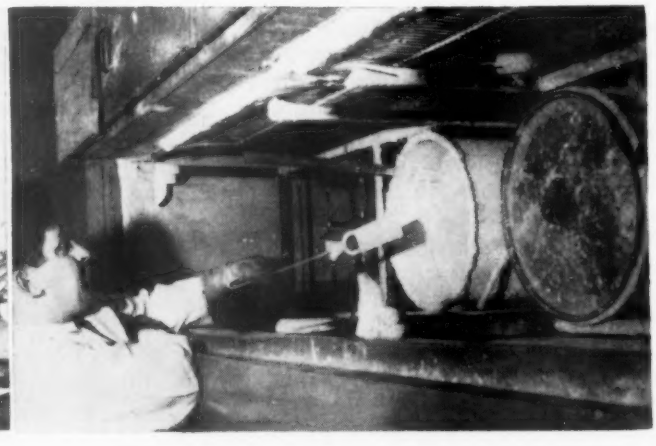
The future of mercury production is problematical. At the present time we are dependent upon foreign sources, chiefly Spain, Italy and Yugoslavia, for our supply. The richest ores of our California mines have been exhausted, and no new significant discoveries replaced them. It appears doubtful if large new deposits will be found anywhere, because of the unusual character of cinnabar, the principal ore of mercury. Since this is a conspicuously brilliant red ore which is not dimmed or otherwise affected by weather, any outcrop could scarcely go unnoticed by the local inhabitants. This is illustrated by the fact that primitive peoples (for example, the Indians in California) have always used cinnabar for paint and pigments.

### Mercury's Future

The history of mercury is curious: big users of former times have vanished, to be replaced by newer big uses of equal importance. When amalgamation disappeared, its consumption of mercury was replaced by the demands of the caustic soda cell and of fulminate; when the importance of fulminate declined, there came the dry cell battery. It is not improbable that realization of this succession of mercury consumers resulted in an announcement, in 1929, by the Mercurio Europeo of a $25,000 reward to anyone discovering new uses for mercury; but whatever discoveries result, their effect can add little to the queer pattern the metal has traced in world economics.

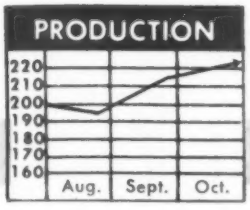
**At Left: Condenser and furnace used in the recovery of mercury from cinnabar ore. This plant is located in Nevada. At right: One of the newer industrial uses of mercury is the Mercast process for making precision castings used in jet engines. In this photograph a frozen mercury cast is shown after being dipped in plastic ceramic material.**



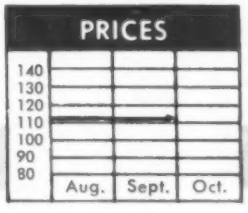


Trend of Business
As Seen In Current
News & Statistics

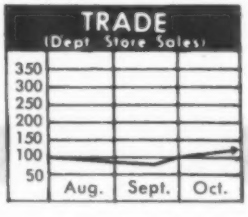
# Where We Stand




| | BASE | LATEST | MONTH AGO | YEAR AGO | % OF CHANGE IN MONTH | % OF CHANGE IN YEAR |
|---|---|---|---|---|---|---|
| Industrial Production Index | 1935-1939=100 | 223 | 212 | 218 | + 5.2 | + 2.3 |
| Steel Production (Weekly) | 000 net tons | 2,197 | 2,115 | 2,041 | + 3.8 | + 7.6 |
| Electric Power Production (Weekly) | mil KWH | 7,698 | 7,324 | 7,160 | + 5.1 | + 7.5 |
| Bituminous Coal Production (Weekly) | 000 net tons | 8,975 | 9,100 | 10,922 | — 1.3 | —17.8 |
| Auto, Truck & Bus Output (Weekly) | units | 130,453 | 102,126 | 114,479 | +13.9 | +14.0 |
| Petroleum Output (Weekly) | 000 bbls. | 6,517 | 6,367 | 6,329 | + 2.3 | + 2.9 |




| | BASE | LATEST | MONTH AGO | YEAR AGO | % OF CHANGE IN MONTH | % OF CHANGE IN YEAR |
|---|---|---|---|---|---|---|
| All Commodities (BLS) | 1947-49=100 | 111.7 | 112.2 | 113.4 | — 0.4 | — 1.5 |
| Farm Products | 1947-49=100 | 106.4 | 109.9 | 109.9 | — 3.1 | — 3.1 |
| Metals & Metal Products | 1947-49=100 | 124.5 | 124.1 | 122.1 | + 0.3 | + 1.9 |
| Structural Products | 1947-49=100 | 113.8 | 113.8 | 113.6 | 0 | + 0.1 |
| Steel Billets (Pittsburgh) | net ton | $59.00 | $59.00 | $56.00 | 0 | + 5.3 |
| Steel Scrap, heavy melting, Pitts. | ton | 43.00 | 43.00 | 44.00 | 0 | — 2.3 |
| Copper, electrolytic | lb. | .24½ | .24½ | .24½ | 0 | 0 |
| Rubber (rib-smoked sheets) | lb. | .27 | .26¾ | .52 | + 0.9 | —48.0 |
| Wheat, No. 2 | bu. | 2.68¼ | 2.70½ | 2.79⅞ | — 0.8 | — 4.1 |




| | BASE | LATEST | MONTH AGO | YEAR AGO | % OF CHANGE IN MONTH | % OF CHANGE IN YEAR |
|---|---|---|---|---|---|---|
| Dept. Stores Sales Index (Fed. Res.) | 1935-39=100 | 125 | 100 | 117 | +25.0 | + 6.8 |
| Commercial Failures (Dun & Bradstreet) | no. | 147 | 110 | 126 | +33.6 | +16.6 |
| Freight Carloadings | cars | 842,713 | 746,044 | 868,683 | +12.9 | — 2.9 |

## FINANCE

| | | | | | | |
|---|---|---|---|---|---|---|
| Stock Prices (Standard & Poor's) | 1926=100 | 189.8 | 196.3 | 188.8 | — 3.3 | + 0.5 |
| Bank Clearings (New York) | mil $ | 8,494 | 7,487 | 9,155 | +13.4 | — 7.2 |
| Federal Reserve Credit | mil $ | 25,325 | 24,872 | 25,117 | + 1.8 | + 0.8 |
| Currency in Circulation | mil $ | 29,617 | 29,364 | 28,385 | + 0.8 | + 4.3 |

# MANUFACTURERS' SALES, INVENTORIES AND NEW ORDERS

| | 1951 | | 1952 | | | |
|---|---|---|---|---|---|---|
| | August | Dec. | May | June | July | August (p) |
| **Value of Manufacturers' Sales Seasonally Adjusted (Millions of Dollars)** | | | | | | |
| All Manufacturing industries | 22,500 | 20,761 | 23,007 | 21,848 | 21,249 | 22,100 |
| Durable goods industries | 10,300 | 9,786 | 11,345 | 10,259 | 9,666 | 10,400 |
| Primary metals | | 1,853 | 1,843 | 998 | 1,974 | |
| Fabricated metals | | 1,076 | 1,178 | 1,021 | 1,026 | |
| Electrical machinery | | 1,034 | 1,099 | 1,186 | 870 | |
| Machinery (except electrical) | | 1,926 | 2,176 | 2,104 | 1,708 | |
| Motor vehicles & equipment | | 1,357 | 1,887 | 1,872 | 1,467 | |
| Transportation equipment (exc. motor vehicles) | | 610 | 740 | 682 | 495 | |
| Furniture and fixtures | | 242 | 299 | 320 | 244 | |
| Lumber products (exc. furniture) | | 587 | 744 | 764 | 623 | |
| Stone, clay and glass products | | 418 | 509 | 487 | 508 | |
| Professional, scientific instruments | | 222 | 281 | 261 | 232 | |
| Other industries, incl. ordnance | | 462 | 590 | 564 | 519 | |
| Nondurable goods industries | 12,200 | 10,975 | 11,662 | 11,588 | 11,583 | 11,700 |
| Food and kindred products | | 2,979 | 3,180 | 3,085 | 3,032 | |
| Beverages | | 582 | 679 | 732 | 591 | |
| Tobacco products | | 288 | 311 | 313 | 278 | |
| Textile-mill products | | 1,110 | 1,140 | 1,086 | 1,182 | |
| Apparel | | 727 | 743 | 792 | 940 | |
| Leather and products | | 208 | 220 | 229 | 298 | |
| Paper and allied products | | 601 | 607 | 605 | 637 | |
| Printing and publishing | | 782 | 876 | 808 | 740 | |
| Chemicals and allied products | | 1,408 | 1,552 | 1,509 | 1,535 | |
| Petroleum and coal products | | 1,927 | 1,916 | 1,997 | 1,912 | |
| Rubber products | | 363 | n.a. | 434 | 438 | |
| **Book Value of Manufacturers' Inventories Seasonally Adjusted (Millions of Dollars)** | | | | | | |
| All Manufacturing industries | 40,200 | 42,014 | 42,458 | 39,908 | 42,213 | 42,700 |
| Durable goods industries | 20,900 | 22,675 | 23,474 | 20,304 | 23,246 | 23,400 |
| Primary metals | | 2,778 | 2,847 | 2,426 | 2,879 | |
| Fabricated metals | | 2,438 | 2,417 | 2,133 | 2,370 | |
| Electrical Machinery | | 2,870 | 3,026 | 2,574 | 3,013 | |
| Machinery (exc. electrical) | | 5,112 | 5,325 | 4,509 | 5,250 | |
| Motor vehicles & equipment | | 2,700 | 2,716 | 2,455 | 2,588 | |
| Transportation equipment (exc. motor vehicles) | | 2,176 | 2,457 | 1,657 | 2,448 | |
| Furniture and fixtures | | 520 | 544 | 588 | 531 | |
| Lumber products (exc. furniture) | | 1,092 | 1,060 | 1,017 | 1,059 | |
| Stone, clay and glass products | | 841 | 935 | 837 | 960 | |
| Professional, scientific instruments | | 718 | 716 | 649 | 720 | |
| Other industries, incl. ordnance. | | 1,428 | 1,430 | 1,458 | 1,430 | |
| Nondurable goods industries | 19,400 | 19,339 | 18,985 | 19,605 | 18,967 | 19,300 |
| Food and kindred products | | 3,386 | 3,417 | 3,554 | 3,385 | |
| Beverages | | 1,193 | 1,246 | 1,209 | 1,230 | |
| Tobacco products | | 1,836 | 1,793 | 1,656 | 1,782 | |
| Textile-mill products | | 2,814 | 2,508 | 3,222 | 2,542 | |
| Apparel | | 1,446 | 1,284 | 1,746 | 1,315 | |
| Leather and products | | 567 | 528 | 652 | 518 | |
| Paper and allied products | | 1,005 | 1,071 | 917 | 1,058 | |
| Printing and publishing | | 757 | 729 | 702 | 717 | |
| Chemicals and allied products | | 3,000 | 3,033 | 2,850 | 3,062 | |
| Petroleum and coal products | | 2,535 | 2,544 | 2,481 | 2,561 | |
| Rubber products | | 799 | n.a. | 616 | 795 | |
| **Manufacturers' New Orders (Unadjusted)** | | | | | | |
| All Manufacturing industries | 23,000 | 20,344 | 21,797 | 22,556 | 24,772 | 23,700 |
| Durable goods industries | 11,000 | 9,889 | 10,650 | 12,235 | 13,033 | 11,100 |
| Nondurable goods industries | 11,900 | 10.455 | 11,146 | 10,321 | 11,738 | 12,600 |

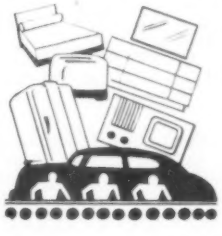
p — preliminary  n.a. — not available  r — revised

## SALES, INVENTORIES AND NEW ORDERS

# STRAWS IN THE TRADE WIND

● Industrial expansion at a pace "unparalleled in history" has been occurring in the United States since World War II according to a new study made by the National Industrial Conference Board. On the average, each of the 138 companies (operating 1,446 separate plants) surveyed, had more than four expansion projects in the years 1946 to 1951. Considering the expansion on a regional basis, NICB said "The West is still growing more rapidly than any other portion of the country". (Purchasing's Opinion Poll for October asked P.A.'s if they had noticed any significant examples of plant relocation or decentralization in their areas since the war. A higher percentage of affirmative answers was received from the Pacific Coast than from any other area).

● The country's annual productive capacity (now approximately $280,000,000,000) will rise by more than a third to $380,000,000,000 in 1962, recently predicted Leon H. Keyserling, chairman of the President's Council of Economic Advisers. He added, however, that he thought the production of automobiles could not expand indefinitely either from the standpoint of cars or of roads. His views on the auto industry were disputed by Harold S. Vance, chairman of the board of the Studebaker Corporation.



● The existence of "creeping socialism" in the United States is no myth, despite what the politicians say. That's the stand taken by the Council of State Chambers of Commerce in a study just released. "The progress made to date in furthering the declared objectives of the American socialist movement stands out clearly on the record of legislative and executive action in Washington" the council declares. The council listed these goals as comprising the socialist blueprint—and cited examples of how they are being carried out: government control of banking and credit, goverment ownership or control of electric power and other basic instruments of production, government ownership or control of the land, and government control of the import and export trade.

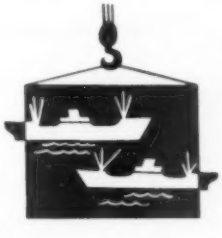
● The Federal Trade Commission charge that the international oil industry is largely controlled by five large American companies and two big British firms is endangering foreign oil supply, according to Bruce K. Brown, president of the Pan-Am Southern Corporation and former petroleum administrator for defense. The move has encouraged talk of further nationalization of the oil industry in those countries which are heavy producers. Newspapers, he said, have been particularly vocal with such demands.

● World production of crude petroleum increased by 12.8% in 1951 over the previous year, reaching a total of 4,282,977,000 barrels, according to the Bureau of Mines. United States production rose by 13.7% or 270,900,000 barrels.

● Warehouses received a total of 16.3% of the more than 737,000,000 tons of finished steel shipped by companies in the United States in the 12-year period, 1940 to 1951, inclusive. Construction and contractors' products, according to a report by the American Iron and Steel Institute, took 14.5% of the total. From nearly 46,000,000 tons in 1940, total annual shipments of the industry rose to nearly 79,000,000 tons in 1951, a gain of 72%.

● Latest Business Survey Committee report of the Purchasing Agents Association of Chicago sums up general business conditions this way: "The report confirms statements that 'business is good' heard from many sources these recent weeks. After reports of production increases . . . high present employment and larger order backlogs, which are supporting advancing prices, over-optimism might occur. Storm warnings in this survey lie in the limited increase in backlog of orders compared to production increases, and the trend towards larger inventories."

● Although military and economic aid shipments were stepped up during August, general exports during the month were 15% under the 1951 monthly average, and approximately 20% under the average for the first six months of 1952. General imports declined in August about 11% below the 1951 monthly average and 9% under the average for the first six months of this year.



● Non-farm dwelling starts in September reached 98,000, just 1,000 below the August total, according to the Bureau of Labor Statistics. September was the seventh straight month in which housing starts climbed to or near the 100,000 mark.

# *Industrial Capacity, Materials Production Are On The Way Up*

We're making substantial progress toward developing "whatever military and economic strength is necessary . . . to oppose acts of aggression and promote peace." That's the message of Defense Mobilization Director Henry H. Fowler in his agency's 7th Quarterly Report to the President just two years after enactment of the Defense Production Act, from which the quotation is taken.

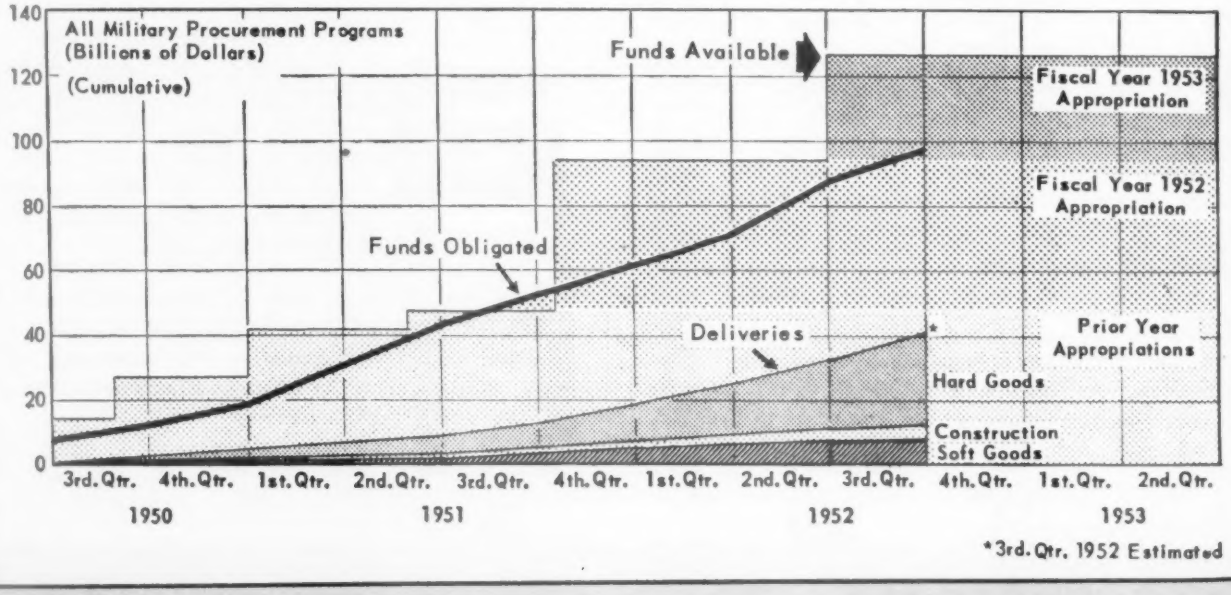
Expansion of industrial capacity is going forward at a record rate, Mr. Fowler states. Projects launched during the past two years, including those aided by accelerated tax amortization certificates are helping to "create margins of capacity." These margins, it is said, will not only enable the country to meet its defense requirements and maintain a high level of civilian supply, but will provide additional resources available for use as needed.

Does this pose the threat of over-production in some lines if rearmament is held at its present pace? More than one observer thinks so, and there is a belief that an increase in the defense program will be proposed to prevent too great a glut of goods and materials.

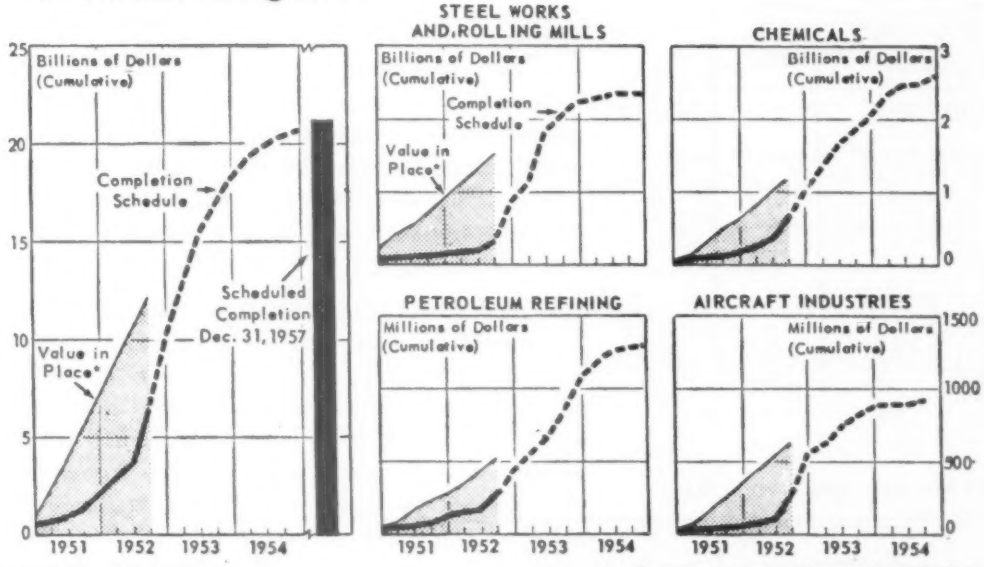
So far, however, it appears that the peak of defense spending is still expected some time in 1953, and that the balance of the program will have enough momentum to carry it along for many months. New funds made available by Congress in July brought to $129 billion the amount available for expenditure in all military procurement and construction programs since Korea. Only about $41 billion worth has been delivered or constructed; some $58 billion more is in process or on order; and contracts covering most of the $30 billion remainder will be let during the next nine months.

The accomplishments of the defense program to date in relation to established goals are shown here in chart form. All charts are reproduced from Mr. Fowler's report, which is entitled "New Resources Bring New Opportunities."

## Military procurement: $129 billion available; $41 billion delivered



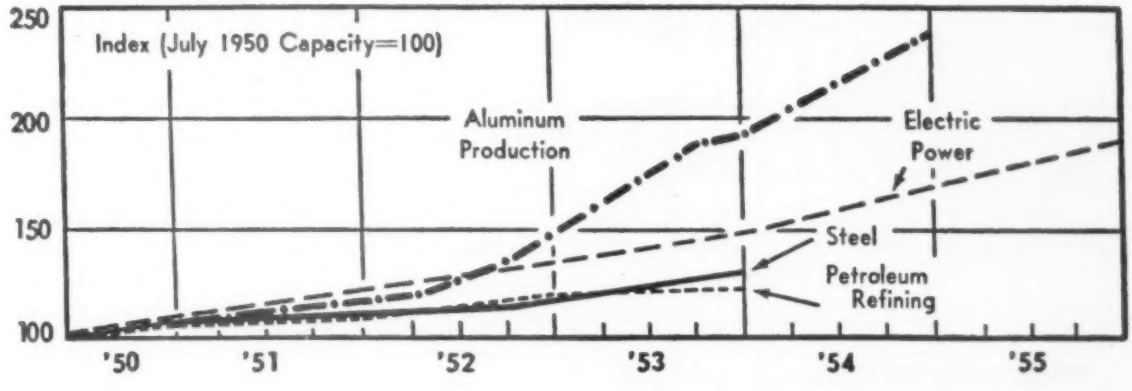
## High rate of completion of tax-aided expansion projects has begun; will continue through 1953



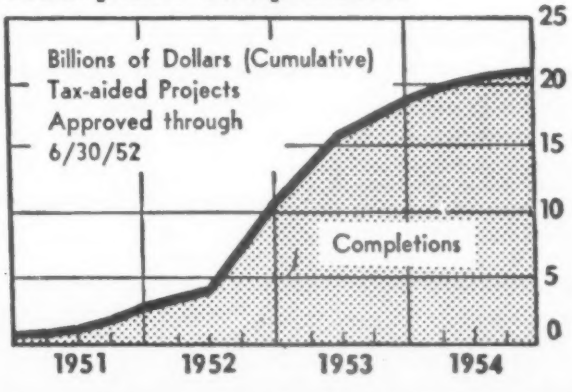

*Third Quarter 1952 estimated

Data for projects approved through June 30, 1952

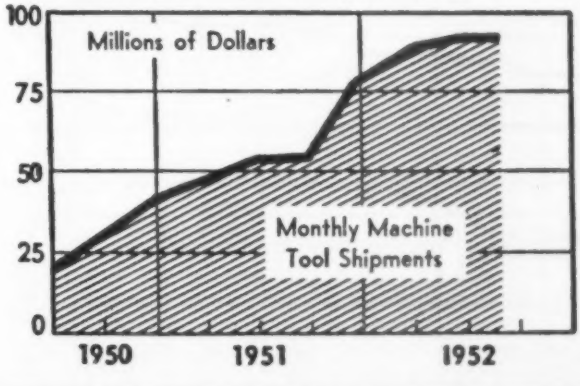
## Rise in capacity of basic industries



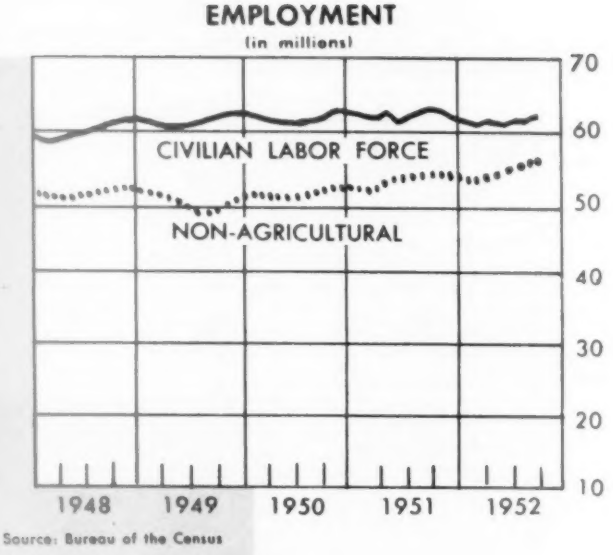

## New plant completions



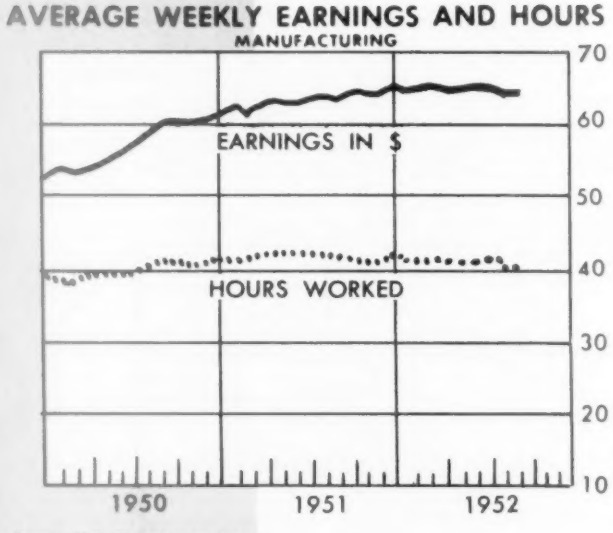

## Machine tool shipments



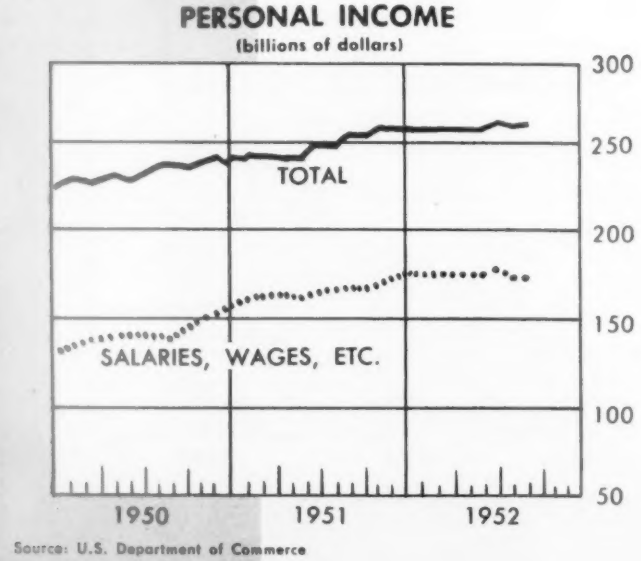
# THE PULSE OF BUSINESS




Source: Bureau of the Census




Source: U.S. Department of Labor




Source: U.S. Department of Commerce

**The election** and, it is to be hoped, the bitterness that went with it, are over. Now the successful candidate moves into the office he so ardently desired to face problems that may surprise him by their number and complexity.

**Although business** — as a general subject — was dragged into the campaign here and there to bolster an argument, or knock one down, neither party really paid it much serious attention. Yet, the welfare of the nation and the health of its business and industry are closely related. Not the least of the new President's concerns should be an attempt to solve some of the problems now facing the business community.

**Don G. Mitchell,** head of Sylvania Electric Products, Inc., and one of the most outstanding and enlightened executives in the country, has outlined some of the specific issues that business men would like to see the new chief executive deal with. These were advanced in a pre-election address in which he deplored the tendency of both candidates to virtually ignore business and its problems. He called such treatment "strange", in view of the fact that "corporations will pay some $22,000,000,000 in taxes this year to the Federal Government and that corporations furnish 34% of the total Federal revenue."

**A more equitable tax burden,** he pointed out, would aid not only business, but the country at large. If taxes were more fairly distributed, he said, business could bring about lower prices of manufactured goods, increased employment because of greater sales, and consequent increased purchasing power of the dollar.

**Less waste and extravagance** in the administration of the national government, a clean-up of anti-Americans in government offices, and an end to deficit financing are three more things on which business would like to see some decisive action taken, Mr. Mitchell said. He called for lower tariffs and an end to the type of treatment we are giving imports — treatment which he said is driving other countries to expand their trade with Russia and other Communist countries.

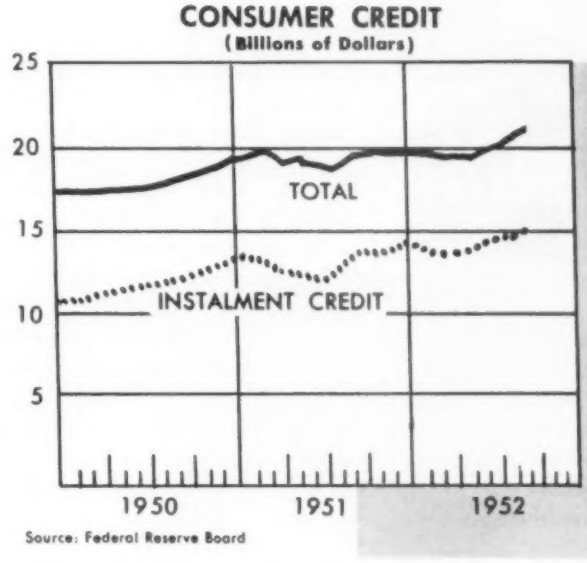
**A wall of separation** between labor relations and politics would be a good thing for the new administration to set its sights on, he implied. Government interference in industry-labor negotiations should be ended, because, "while industry and business are not unwilling to submit deadlocks to a third party, they just want to be sure that the umpire hasn't got a bet on the other team."

**With somewhat more honesty** than is generally expected during a political campaign, Mr. Mitchell said, "of course, industry and business will benefit" if these policies are carried out. "But we think the people of the United States will be the big winners in the long run and we won't be running up a bill for Uncle Sam to pass back to the tax-

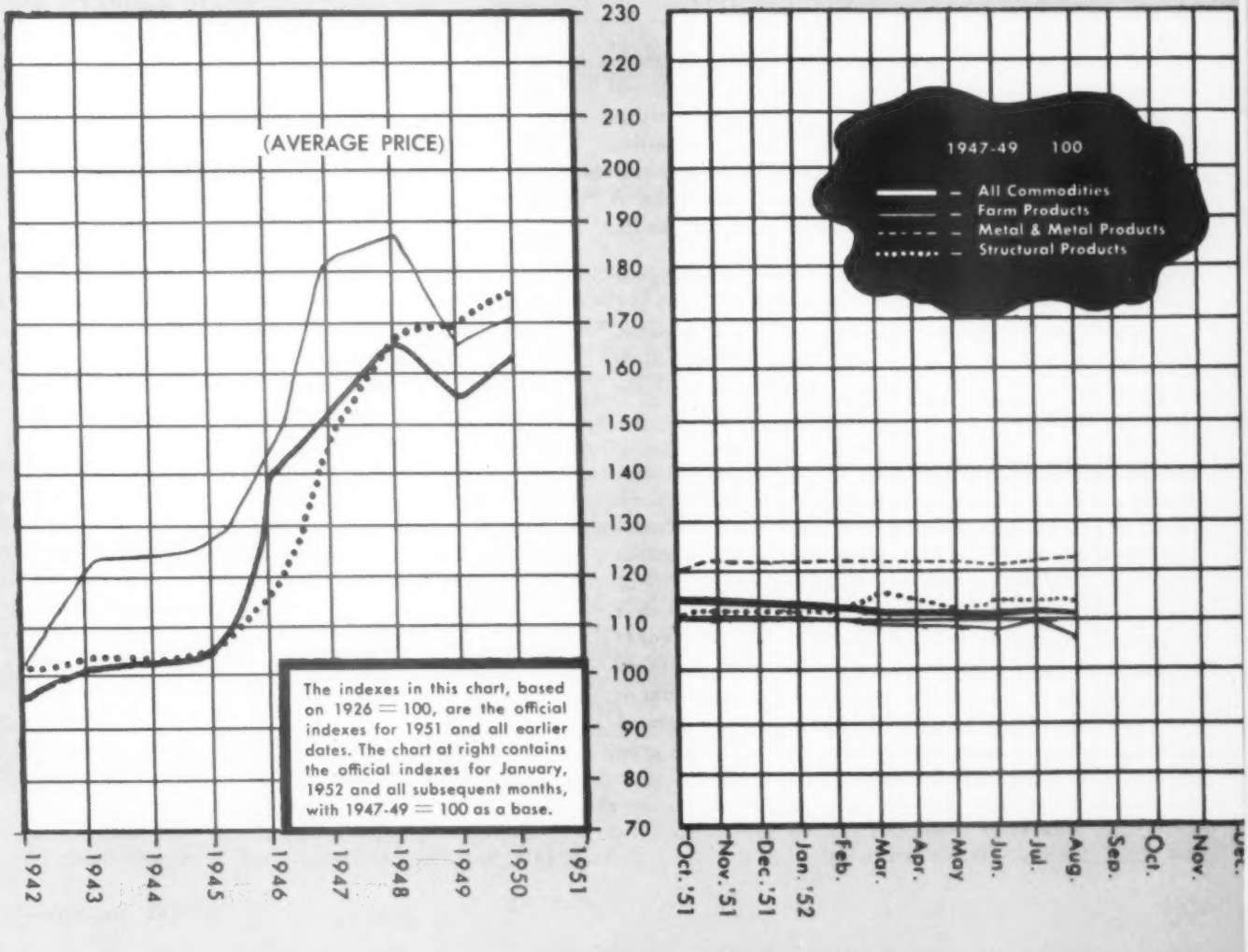
payers." It will be interesting to see how the incoming administration acts on these matters.

**Meanwhile, business activity** picked up—a "quickening" the latest Survey of Current Business of the Department of Commerce calls it—as the steel strike and the normal summer slump receded into the distance.

**These are the factors** revealing a faster tempo of activity moving into the third quarter: personal income was up in August by more than three billion dollars; retail sales have increased with the rise in personal income; private investment has been continuing at record rates—residential housing construction advanced in September to an annual rate 10% higher than that of a year ago; manufacturers' orders increased in August after dipping in July; business inventories fell two hundred million dollars, mostly because of heavy retail sales; employment is at 62,300,000, or 98% of the civilian labor force.




## THE PRICE PICTURE



# MATERIALS AND MARKETS

**STEEL:** Effects of last summer's steel strike became quite clear recently when the National Production Authority announced that allotments of steel for civilian goods in the first quarter of 1953 will amount to only 33% of the average amount used in the first six months of 1950. Civilian producers are operating in this current quarter on an allotment of 49.5%. In making the announcement, the agency revealed that many manufacturers of consumer products have been seeking additional allotments of steel for both the current quarter and the first quarter of next year to prevent severe cutbacks in production, and in some cases temporary shutdowns.

The NPA announcement was tempered somewhat with the declaration that additional supplies of steel may be available during the first quarter, permitting a rise in the allocation. The way production is going, there seems to be some grounds for optimism, although it was pointed out that "there are factors which could upset calculations now being made by steel producers." Production of ingots is at an all-time high, and capacity is increasing steadily.

One of the "factors" that might cause further trouble in the steel supply situation is the possibility of a long coal strike. Stocks above ground are high, but not uniform throughout the industries using coal. Steel companies, heavy users of coal, are reported to have inventories running from a two-months' supply down to a few weeks. A prolonged strike could endanger production at many mills.

Hot and cold rolled sheets, plates, and pipe are among the tightest items. Carbon and alloy bars are also hard to get, and an Advisory Committee representing hot rolled carbon steel bar producers told N.P.A. that there will be a tight situation in larger sizes of quality steel bars until the middle of next year.

**NON-FERROUS METALS:** Despite losses in aluminum production being caused by trouble in starting new plants and by the power shortage in the Pacific Northwest and Tennessee Valley, N.P.A. announced that allocations of the metal for the first quarter of 1953 would be 55% of base period use, the same figure now in effect . . . Latest figures on production indicate that new postwar records are being set, since curtailment caused by power shortages has not yet been recorded. Output of primary aluminum in the month of August was 170,350,658 pounds, a gain of 12.5% over the previous month, and a gain of 15.5% over the output in August, 1951.

Pressure for a rise in copper prices continues. The Primary Copper Producers Industry Advisory Committee told the N.P.A. that prices should be decontrolled, and that it is "absolutely" necessary to get rid of the 24½ cents per pound price in order to reach the production goals in refined copper required by civilian, military and stockpile demands. Brass mill representatives also called for an end to decontrol, and were told that a price increase for copper is being studied at "higher levels." Meanwhile, demand remained high and there were complaints from producers of wire and cable mill products that the government had not fully publicized the fact that copper is in short supply. Deliveries in September totaled 134,689 tons, as against an August figure of 127,106 tons . . . Allocations of copper for the first quarter of 1953, under the Controlled Materials Plan, will be at 50% of the base period use, the same as at present.

Resumption of the free market in the London Metal Exchange had immediate effect on the price of lead here, bringing it down in two steps to 14 cents a pound. At this writing, lead prices in London had closed at the equivalent of 13 cents a pound in this country. In theory, U.S. users could buy lead abroad at a cent a pound less than it is going here—but they would have to wait months for delivery. Trade circles said a slight further dip in the U.S. prices is possible, but it is felt that it could not go much below 14 cents without driving some producers out of the market.

Zinc prices went down another ½ cent as demand continued slow, and here again it is expected that any further decline will drive producers out of the market.

Titanium is making more and bigger news in the nonferrous field. A demonstration at the Army's Watertown Arsenal recently publicized the potentials of this new "middleweight champion" metal, as one producer calls it. It was generally agreed that if these potentials were realized and wider use of titanium made in consumer goods, significant price reductions could be made in a relatively short time. A boost in supply of the metal was indicated shortly thereafter when Rem-Cru Titanium, Inc. announced that it has started expansion of facilities to more than double its ingot capacity. Rem-Cru, which was the first concern in the field to offer titanium commerically, has produced the metal and alloys at a rate exceeding 10 tons a week during 1952. The company currently produces ingots weighing up to 1,200 pounds each. New furnaces and changes on existing one will boost ingot sizes to a range of 2,000 to 4,000 pounds by the end of 1952.

# Building a Procurement Catalog for Governmental Purchasing

**By I. R. Vanderberry**
Research Counsel
Division of Purchases and Printing
Commonwealth of Virginia
Richmond, Va.

Mr. Vanderberry checks a listing in the Procurement Catalog. Despite its bulk, the catalog is convenient for desk reference.

WHEN I was assigned to the Division of Purchases and Printing, which is the centralized purchasing organization for the Commonwealth of Virginia agencies, there was lack of uniformity in methods and procedures, and a state of confusion existed incident to heterogenous terms and non-standard descriptive patterns for both supply items and equipment. Among other things there was no semblance of a workable commodity classification.

In a procurement system embracing the range of equipment, materials and supplies used by 135 public agencies, representing an outlay of over $25,000,000 annually for using points scattered all over the State, a commodity classification obviously was essential.

A straight alphabetical list of items would not meet requirements for under such an arrangement related items equipment, materials and supplies would be widely separated. Further, many items are commonly referred to by several different names, and there would have to be agreement on standard item names instead of the different names used by various agencies for identical articles. The immediate needs for some form of commodity classification were as follows:

(1) There were eight buyers in the Purchase and Printing Division, and there was need for a positive method of assigning purchasing responsibility by types of commodities. A too general grouping would not suffice as there were many borderline articles that could fall within two or more general groups. Segregation had to be specific. A plan was needed that would automatically sort requisitions by buyers, prevent overlapping of listings by agencies and thus avoid delay and extra clerical work in making proper distribution of the work flow.

(2) A plan was needed for classifying vendors in preparing invitation-to-bid mailing lists. A method grouping whereby prospective bidders could indicate to the Division the commodities on which they desired to quote without listing each individual article, was sought.

(3) An orderly plan for filing manufacturers' and distributors' catalogs was desired.

(4) A guide for clerks in recording purchases was needed. By reason of the variations in descriptions of identical articles on purchase orders from which records are posted, the same commodity would not always be posted on the same ledger card.

(5) Only a small percentage of agency requirements were covered by term contracts or price agreements, against which State agencies could issue contract releases. As the State did not operate centralized warehouses, much of its requirements had to be purchased periodically. These conditions required the establishment of purchasing schedules for certain commodities, and requisition deadlines for the 135 agencies.

The listing of each individual item in purchase schedules represents considerable typewritten bulk, and

**Before . . . .**

Prior to commodity classification and cataloging, the purchase records were obviously inadequate and cumbersome. Cross-checking was required, but failed to give complete system-wide information on commodities.

**. . . . and After**

Purchase records based on the new Procurement Catalog classification and codes are housed in Kardex files providing information and control on 83,340 items bought for use by all State agencies.

designation by groups of commodities with corresponding codes seemed desirable.

### Step 1: Classification

In an effort to develop a classification that would meet all needs, present and future, it was decided to separate equipment, materials and supplies into very broad classes such as Building and Construction Materials, Automotive Supplies, Foods, and so on. Each large class was then subdivided into many smaller groups and to each group was assigned a title. For instance, in the Building and Construction Materials class were included such groups as fasteners, glass and glass products, lumber and products, pipe, tubing and fittings, and each of these smaller groups were made up of individual articles alphabetically arranged.

For coding, a simple numerical arrangement was adopted — two digits for the Class and two digits for the Group, leaving breaks in numbers for expansion as required. The articles within each Group were not coded. The coding of articles was left for catalog study after a shake-down period.

All data were laboriously compiled from Division records, manufacturers' catalogs, and such other classification studies and source material as was available. Listings were sifted, shuffled, sorted, edited, and finally in 1945 were published as D.P. Publication 119b, which is known as the Commonwealth of Virginia Procurement Classification.

Since then, these classification codes have been used as a basis for purchase requisition preparation, assignment of work among buyers, classification and filing of vendors' catalogs and research material, the preparation of invitations to bid, and finally the preparation of purchase orders and maintenance of the commodity purchase record.

In the foreword of the Procurement Classification, the following statement appears: "It will serve also as a basis for simplification and standardization studies; the adoption of State specifications; *and as a foundation for the preparation of an accurate and complete catalog to be published in loose-leaf form as rapidly as standards are adopted and specifications are prepared.*

The Classification is simply a framework. At the time of its release it was realized there was a tremendous amount of work to be done before the anticipated Procurement Catalog could be prepared and distributed.

### Step 2: Identification

The next step in this program involved the preparation of descriptive specifications for each different article purchased by the Commonwealth. The estimates as to the total number of items ranged from 30,000 to 75,000, and it was recognized that an undertaking of this size in conjunction with regular duties was an impossibility.

The Catalog had to go far beyond the grouping of items. Orderly listing of the standard items by names decided upon for use throughout the procurement system, and also each size, type, color and other descriptive characteristics of the article, was necessary along with the assignment of a catalog number to each such variation by which the size, color, etc., could be positively identified throughout the purchasing procedure.

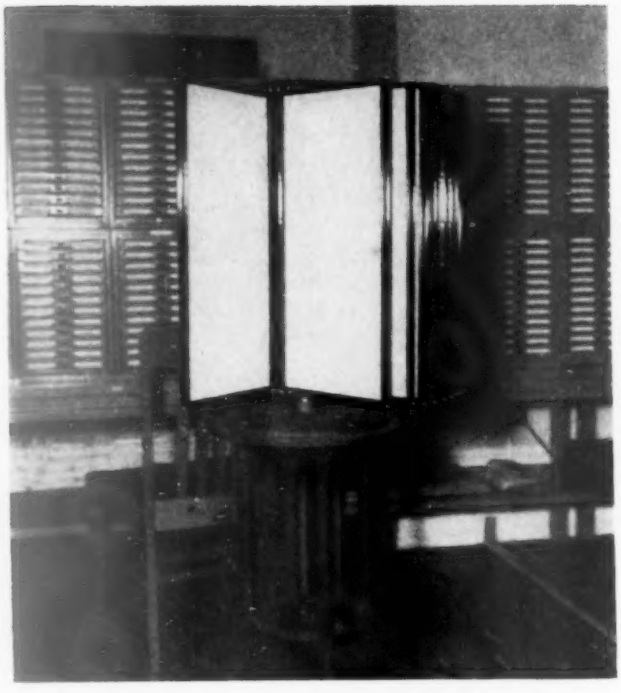
Accordingly, a contract was entered into with Remington Rand Inc. in May, 1950. Remington Rand was supplied with a copy of each purchase order issued during the fiscal year of 1949 by the Division and its agencies. There were approximately 100,000 orders.

That company as contractor was required to review all items purchased, and to bring together all like items into the various classes previously determined by the Commonwealth of Virginia in its commodity classification. These items were subdivided into groups within each class, in accordance with the grouping outlined in the Commonwealth Procurement Classification. Each item was then compared to all like items to determine duplication, all duplicates being brought together. A description of each different item that appeared on each purchase order was prepared and written on an 8 x 5 card, subsequently to be used as a base catalog record by the Commonwealth.

In addition to the items described from the study of purchase orders

## COMMODITY CLASSIFICATION AND CATALOGING

| PROVIDES: | PREVENTS: |
|---|---|
| 1. Positive identification and full description of each item requisitioned. Accuracy. | 1. Incomplete or improper description of articles in requesting quotations, and possible purchase of wrong articles. |
| 2. A logical grouping of related commodities. | 2. An unwieldy alphabetical listing of articles regardlesss of their nature or use. |
| 3. An orderly means of distributing work among buying specialists. | 3. Overlapping of classes and scrambled requisitions in which two or more buyers are affected. |
| 4. A means of building up classified lists of vendors. | 4. Preparation of a vendor list for each specific article. |
| 5. A simple and effective plan for grouping and filing vendors' catalogs. | 5. Extensive cross-indexing and delay in locating appropriate catalogs. |
| 6. A sound plan for filing and finding commodity material. | 6. A loss of valuable commodity reference data, by having a definite place for it. |
| 7. Uniformity of terminology throughout the entire procurement system. | 7. Three or four different names and descriptions for same article, with consequent duplication of stocks and records. |
| 8. Abbreviated but precise method of requisitioning. Less typing. | 8. Writing of lengthy descriptions on requisitions to explain what is needed. |
| 9. Uniform method of stating requirements on requisitions and invitations to bid. | 9. Loss of time now required by buyers in editing requisitions received. |
| 10. Illustration of need for more simplification and standardization. | 10. Conflicting opinion as to where better standardization is needed. |
| 11. Purchase of commercial standard designs, sizes, packaging, etc. | 11. Requisitioning of special or non-standard articles, at greater cost. |
| 12. Accurate purchase records and statistics through catalog numbering system and punch card tabulation. | 12. Inaccurate and inadequate purchase records. |
| 13. Uniform base for inventory and stores records. | 13. Confusion and duplication formerly existing because of non-standard name descriptions of articles. |
| 14. Better competition through the elimination of trade names as the means of identifying and describing products. | 14. Limitation of consideration to one or two brands. |
| 15. Means for simplifying the scheduling and consolidation of purchase. | 15. Misunderstanding by agencies of instructions concerning periodic requisitions. |
| 16. Better base for inspecting deliveries, checking invoices, etc. | 16. Errors in comparing deliveries with purchase order designations. |
| 17. Assurance that the description of articles will be complete in preparing invitations to bid. | 17. Misunderstanding by bidders as to exactly what is desired. |
| 18. A common denominator of specification for the entire procurement system. | 18. Confusion, ambiguity, and conflict of opinion between Purchasing Division and using agencies as to quality of articles to be procured. |



A useful adjunct to the purchase record is this file listing all vendors numerically on rotary visible panels. The same identification number for a vendor is used throughout the system. This makes it possible to accumulate dollar purchase volume, by vendor.

the contractor was authorized to fill in items not indicated on purchase orders, which, in the opinion of the contractor and the Division should be included to round out standard size schedules.

### Step 3: Cataloging

Next, the contractor devised a 10-digit numbering system for product identification, constituting a code by which a different number is assigned to each item described, thus avoiding the possibility of confusion and duplication, and at the same time integrating each item in its proper place in the total list of purchase requirements.

The first four digits of the catalog number were the same as those used in the initial commodity classification—the first two digits indicating the class, and the next two being the group within that class. The remaining six digits are employed to identify the individual item, two digits being used for the name and four for the description.

For example, the catalog number for a 4-watt, white, 125 volt incandescent lamp is written as: 5219 10 0010. This code number indicates:

*Class:* 52—Electrical Supplies
*Group:* 19—Lamp Bulbs and Tubes
*Name:* 10—Lamp, Fluorescent
*Description:* 0010—4-watt, white, tubular, 105 to 125 v., miniature bi-pin base, $\frac{5}{8}$″ diameter x 6″ long.

Representatives of the Commonwealth and the contractor conferred frequently during this stage. Certain changes were made in the basic classifications; several of the classes of equipment and supplies were revised, and some were combined; groups within a class were revised or combined, and several groups were removed from one class to another.

These code numbers were entered on the 8 x 5 work card, in addition to the item description, making the numerical arrangement possible throughout the listing. In addition to the work cards, the Commonwealth was furnished with approximately 3,000 typed offset plates, from which pages of the finished catalog were reproduced by the Division of Purchases.

### A Monumental Project

The contractor's personnel was assigned to the contract over a period of fourteen months, and we are informed that approximately 35,000 man hours were utilized in the compilation. The complete catalog lists 83,340 items, with descriptions and instructions sufficiently complete for procurement purposes. Articles covered by technical specifications of the Commonwealth of Virginia are so indicated, and the Virginia specification symbol is shown for cross-reference purposes.

The Catalog consists of 2,723 pages, in loose-leaf form. The sheets are 9 x 12, printed on both sides, in black ink on buff paper. It makes a book six inches thick, in four-post binders that open flat for reference work. The covers are brown plastic, embossed in gold with the title: "Commonwealth of Virginia—Procurement Catalog—Equipment, Material and Supplies."

The Foreword includes ample instructions for use, a glossary of abbreviations employed, and examples of purchase requisitions prepared in proper form to conform with the catalog system.

There is also a 137-page double column index in which each standard item name is listed alphabetically, indicating by the first six digits of its catalog code the Class and Group in which the article and description can be found. Since the catalog itself is in numerical se-

COMMODITY VA. CAT. SPEC. NO.
VIRGINIA COMMODITY PURCHASE RECORD
DATE | PURCHASE ORDER NUMBER | REQUISITION NUMBER | VEN | DESCRIPTION | QUANTITY NUMBER | QUANTITY UNIT | NET PRICE PER UNIT | TOTAL NET PRICE | DEPT. NUMBER

COMMODITY VA. CAT. SPEC. NO.
VIRGINIA COMMODITY PURCHASE RECORD—CONTRACTS
VENDORS 1 2 3 4 5 | VENDORS 6 7 8 9 10
CONTRACTS
VEN. | CONTRACT NO. | DATE MADE | DATE EXPIRES | UNIT PRICE | QUANTITY | REMARKS

Specimens of the Commodity Purchase Record and Purchase Contract Record cards. The heading in each case shows commodity name, catalog number, and specification number.

Specimen page from the Catalog showing a purchase requisition made out employing the 10-digit identification system.

quence, use of this method instead of page numbers makes reference just as easy and avoids the necessity of reprinting the index page in the event that catalog sheets are revised and reprinted.

Each Class section of the catalog is separated by a tough divider sheet carrying an exposed tab on which the Class Number is printed. On the face of each divider sheet is imprinted a list of the titles of commodity groups making up that Class.

A sufficient number of copies will be furnished each requisitioning agency so that each operating unit of an agency may have access to the catalog in preparing its purchase requisitions. Plans also provide for ultimately placing appropriate sections of the Catalog in the hands of approved and established vendors; this innovation, when perfected and put into operation, will make it unnecessary to give extensive descriptions on invitations to bid and on purchase orders.

Following is an analysis of the cost of the Catalog:

| | |
|---|---|
| Research and Compilation | $78,808.02 |
| Reproduction (1,000 copies) | 10,044.51 |
| Binders (400) | 2,604.00 |
| | $91,456.53 |

## *Using the Catalog*

Use of the complete code number and the standard item name *only*, of each item ordered, will be necessary for positive identification. This assures that a great volume of typing and explanation by the requisitioning agency, heretofore necessary to fully inform the Purchasing Division of requirements, will be eliminated.

It is realized that a catalog of this nature would defeat its own purpose if allowed to become static. Provision has been made in the operating budget of this Division for the employment of a catalog editor who will supervise the work incident to correcting, revising, reprinting and distributing new material as need requires. He will also serve as a liaison between the

COMMONWEALTH OF VIRGINIA
DIVISION OF PURCHASE AND PRINTING
PURCHASE REQUISITION (EXAMPLE

REQUISITION NO. 1-62 (Periodic)
SHEET NO. 1
DATE Feb. 1, 1951
INTRA-DEPARTMENTAL REQUISITION NO. 44
SHIP VIA Motor freight - Prepaid

PROCURE FOR NAME OF AGENCY
DELIVER TO NAME, ADDRESS AND F.O.B. POINT

All items May 1st

| Va. Catalog No. | Building Materials — Class No. 44 | Quantity by Unit of Delivery | Purchase Order Number |
|---|---|---|---|
| 4405683143 | Screws, wood | 1 gross | |
| 4405683142 | " " " | 1 gross | |
| 4405683141 | " " " | 1 gross | |
| 4405864060 | Washers, flat | 500 | |
| 4439400230 | Nails | 100 lbs. | |
| 4439400315 | Tacks | 50 lbs. | |
| 4439800115 | " " | 10 lbs. | |

Charge: Approp. Code—Allotment—Quarter
2232-39 4 - 2 - 4
Intra-departmental Signatures

Procurement of items listed as a charge against the accounts indicated hereby is authorized.
Signature John Doe
Title Superintendent
Date Feb. 3, 1951

COMMONWEALTH OF VIRGINIA
AGENCY PURCHASE ORDER (EXAMPLE)

PURCHASE ORDER NO. A 1972
SHEET NO. 1
DATE February 28, 1951
REQUISITION NUMBER February 6, 1951
F.O.B. POINT Feb. 17, 1951
SHIP VIA Contractor's truck
DELIVERY ON OR BEFORE March 10, 1951
TERMS Net- F.C.B. Institution Site

NAME AND FULL ADDRESS OF VENDOR

Vendor's number

NAME AND ADDRESS OF INSTITUTION

| Va. Catalog No. | Description of Articles or Services | Quantity | Unit | Unit Price | Amount |
|---|---|---|---|---|---|
| 4405 68 3141 | Screws, wood, steel, FH, Phillips, #10, 1 in. | 1 | gross | .54 | .54 |
| 4405 68 3142 | Screws, wood, steel, FH, Phillips, #10, 1-1/4 in. | 1 | gross | .55 | .55 |
| 4405 68 3143 | Screws, wood, steel, FH, Phillips, #10, 1-1/2 in. | 1 | gross | .66 | .66 |
| 4405 86 4060 | Washers, flat, steel, U. S. Standard, round, 1 in. | 500 | lbs. | .13 | 65.00 |
| 4439 40 0230 | Nails, wire, box, common, 8D | 100 | " | 9.77 | 9.77 |
| 4439 40 0315 | Nails, finishing, box 4D | 50 | " | 12.00 | 6.00 |
| 4439 80 0115 | Tacks, cut, carpet, plain, #8 | 10 | " | .40 | 4.00 |
| | Total - - - - - | | | | $86.52 |

PURCHASE CONDITIONS

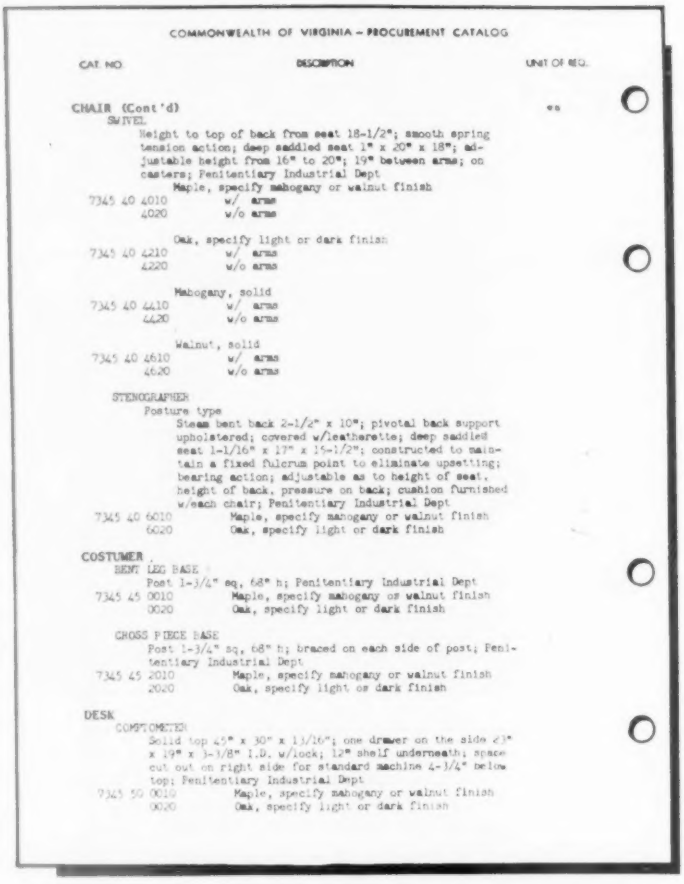
1. This purchase order number including the prefix "A" shall be shown by vendor on all related invoices, delivery memoranda, bills of lading, packages and/or correspondence.
2. All invoices shall be prepared upon the standard state form supplied by the Division of Purchase and Printing, herewith or as requested.
3. A separate invoice for this purchase order or for each shipment thereon shall be rendered immediately following shipment. All copies of invoices shall be forwarded direct to using agency at delivery point shown, not to the Division of Purchase and Printing or to the Division of Accounts and Control unless either is the receiver of the articles or services.
4. All prices unless otherwise specified are net, F. O. B. destination with transportation charges prepaid.
5. Equipment, materials and/or supplies delivered on this order shall be subject to inspection and test upon receipt and if rejected shall remain the property of the vendor.
6. If shipment is made by freight or express the original bill of lading properly receipted shall accompany invoice.
7. If not shown on this order shipping directions will be supplied by the using agency.

Encumbered Approp. Code — Allotment — Quarter
Certified as to availability of funds— Division of Accounts and Control
(Date)

Agency (Write in)
By Sam Smith
Title Steward

VENDOR

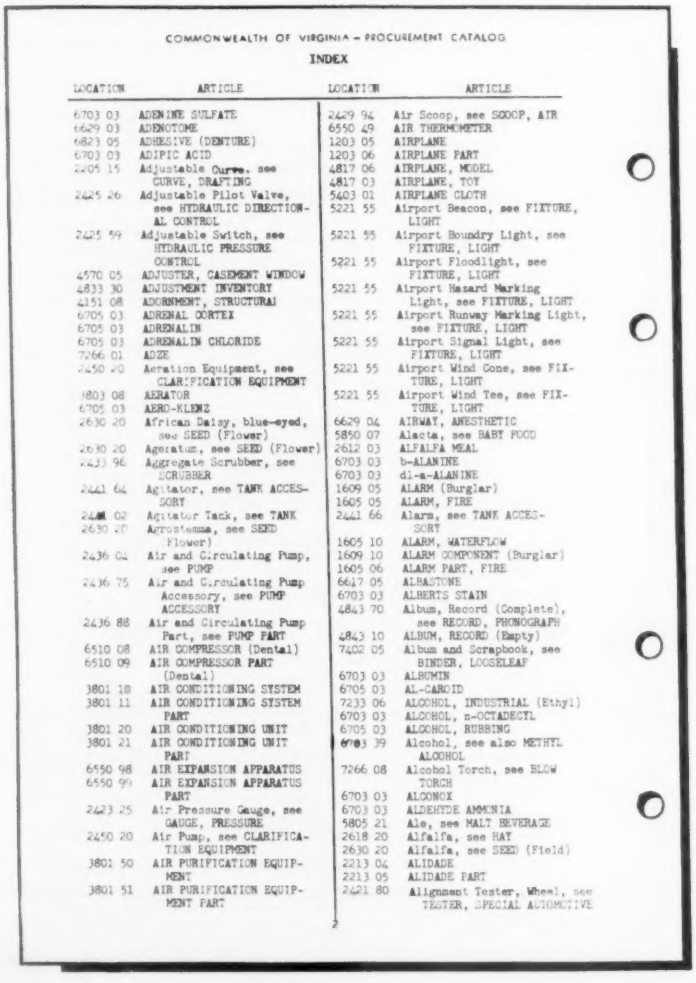
**Using agencies may place orders directly with vendors, against Purchase Department contracts, for quantities totalling $100 or less. This specimen page from the Catalog shows such an Agency Purchase Order properly made out, with catalog numbers corresponding to those employed in executing the contract.**



COMMONWEALTH OF VIRGINIA – PROCUREMENT CATALOG

| CAT. NO. | DESCRIPTION | UNIT OF ISS. |
|---|---|---|
| | **CHAIR (Cont'd)** | ea |
| | SWIVEL | |
| | Height to top of back from seat 18-1/2"; smooth spring tension action; deep saddled seat 1" x 20" x 18"; adjustable height from 16" to 20"; 19" between arms; on casters; Penitentiary Industrial Dept | |
| | Maple, specify mahogany or walnut finish | |
| 7345 40 4010 | w/ arms | |
| 4020 | w/o arms | |
| | Oak, specify light or dark finish | |
| 7345 40 4210 | w/ arms | |
| 4220 | w/o arms | |
| | Mahogany, solid | |
| 7345 40 4410 | w/ arms | |
| 4420 | w/o arms | |
| | Walnut, solid | |
| 7345 40 4610 | w/ arms | |
| 4620 | w/o arms | |
| | STENOGRAPHER | |
| | Posture type | |
| | Steam bent back 2-1/2" x 10"; pivotal back support upholstered; covered w/leatherette; deep saddled seat 1-1/16" x 17" x 16-1/2"; constructed to maintain a fixed fulcrum point to eliminate upsetting; bearing action; adjustable as to height of seat, height of back, pressure on back; cushion furnished w/each chair; Penitentiary Industrial Dept | |
| 7345 40 6010 | Maple, specify mahogany or walnut finish | |
| 6020 | Oak, specify light or dark finish | |
| | **COSTUMER** | |
| | BENT LEG BASE | |
| | Post 1-3/4" sq, 68" h; Penitentiary Industrial Dept | |
| 7345 45 0010 | Maple, specify mahogany or walnut finish | |
| 0020 | Oak, specify light or dark finish | |
| | CROSS PIECE BASE | |
| | Post 1-3/4" sq, 68" h; braced on each side of post; Penitentiary Industrial Dept | |
| 7345 45 2010 | Maple, specify mahogany or walnut finish | |
| 2020 | Oak, specify light or dark finish | |
| | **DESK** | |
| | COMPTOMETER | |
| | Solid top 45" x 30" x 13/16"; one drawer on the side 21" x 19" x 3-3/8" I.D. w/lock; 12" shelf underneath; space cut out on right side for standard machine 4-3/4" below top; Penitentiary Industrial Dept | |
| 7345 50 0010 | Maple, specify mahogany or walnut finish | |
| 0020 | Oak, specify light or dark finish | |

**Specimen page of Catalog showing product descriptions. Each code number specifically identifies the particular item to be procured. The classification and listing serve as a constant warning against duplication and excessive varieties.**



COMMONWEALTH OF VIRGINIA – PROCUREMENT CATALOG

**INDEX**

| LOCATION | ARTICLE |
|---|---|
| 6703 03 | ADENINE SULFATE |
| 6629 03 | ADENOTOME |
| 6823 05 | ADHESIVE (DENTURE) |
| 6703 03 | ADIPIC ACID |
| 2205 15 | Adjustable Curve, see CURVE, DRAFTING |
| 2425 26 | Adjustable Pilot Valve, see HYDRAULIC DIRECTIONAL CONTROL |
| 2425 59 | Adjustable Switch, see HYDRAULIC PRESSURE CONTROL |
| 4570 05 | ADJUSTER, CASEMENT WINDOW |
| 4833 30 | ADJUSTMENT INVENTORY |
| 4151 08 | ADORNMENT, STRUCTURAL |
| 6705 03 | ADRENAL CORTEX |
| 6705 03 | ADRENALIN |
| 6705 03 | ADRENALIN CHLORIDE |
| 7266 01 | ADZE |
| 2450 20 | Aeration Equipment, see CLARIFICATION EQUIPMENT |
| 3803 08 | AERATOR |
| 6705 03 | AERO-KLENZ |
| 2630 20 | African Daisy, blue-eyed, see SEED (Flower) |
| 2630 20 | Ageratum, see SEED (Flower) |
| 2433 96 | Aggregate Scrubber, see SCRUBBER |
| 2441 64 | Agitator, see TANK ACCESSORY |
| 2441 02 | Agitator Tank, see TANK |
| 2630 20 | Agrostemma, see SEED (Flower) |
| 2436 04 | Air and Circulating Pump, see PUMP |
| 2436 75 | Air and Circulating Pump Accessory, see PUMP ACCESSORY |
| 2436 88 | Air and Circulating Pump Part, see PUMP PART |
| 6510 08 | AIR COMPRESSOR (Dental) |
| 6510 09 | AIR COMPRESSOR PART (Dental) |
| 3801 18 | AIR CONDITIONING SYSTEM |
| 3801 11 | AIR CONDITIONING SYSTEM PART |
| 3801 20 | AIR CONDITIONING UNIT |
| 3801 21 | AIR CONDITIONING UNIT PART |
| 6550 98 | AIR EXPANSION APPARATUS |
| 6550 99 | AIR EXPANSION APPARATUS PART |
| 2423 25 | Air Pressure Gauge, see GAUGE, PRESSURE |
| 2450 20 | Air Pump, see CLARIFICATION EQUIPMENT |
| 3801 50 | AIR PURIFICATION EQUIPMENT |
| 3801 51 | AIR PURIFICATION EQUIPMENT PART |
| 2429 94 | Air Scoop, see SCOOP, AIR |
| 6550 49 | AIR THERMOMETER |
| 1203 05 | AIRPLANE |
| 1203 06 | AIRPLANE PART |
| 4817 06 | AIRPLANE, MODEL |
| 4817 03 | AIRPLANE, TOY |
| 5403 01 | AIRPLANE CLOTH |
| 5221 55 | Airport Beacon, see FIXTURE, LIGHT |
| 5221 55 | Airport Boundry Light, see FIXTURE, LIGHT |
| 5221 55 | Airport Floodlight, see FIXTURE, LIGHT |
| 5221 55 | Airport Hazard Marking Light, see FIXTURE, LIGHT |
| 5221 55 | Airport Runway Marking Light, see FIXTURE, LIGHT |
| 5221 55 | Airport Signal Light, see FIXTURE, LIGHT |
| 5221 55 | Airport Wind Cone, see FIXTURE, LIGHT |
| 5221 55 | Airport Wind Tee, see FIXTURE, LIGHT |
| 6629 04 | AIRWAY, ANESTHETIC |
| 5850 07 | Alacta, see BABY FOOD |
| 2612 03 | ALFALFA MEAL |
| 6703 03 | b-ALANINE |
| 6703 03 | dl-a-ALANINE |
| 1609 05 | ALARM (Burglar) |
| 1605 05 | ALARM, FIRE |
| 2441 66 | Alarm, see TANK ACCESSORY |
| 1605 10 | ALARM, WATERFLOW |
| 1609 10 | ALARM COMPONENT (Burglar) |
| 1605 06 | ALARM PART, FIRE |
| 6617 05 | ALBASTONE |
| 6703 03 | ALBERTS STAIN |
| 4843 70 | Album, Record (Complete), see RECORD, PHONOGRAPH |
| 4843 10 | ALBUM, RECORD (Empty) |
| 7402 05 | Album and Scrapbook, see BINDER, LOOSELEAF |
| 6703 03 | ALBUMIN |
| 6705 03 | AL-CARBID |
| 7233 06 | ALCOHOL, INDUSTRIAL (Ethyl) |
| 6703 03 | ALCOHOL, n-OCTADECYL |
| 6705 03 | ALCOHOL, RUBBING |
| 6703 39 | Alcohol, see also METHYL ALCOHOL |
| 7266 08 | Alcohol Torch, see BLOW TORCH |
| 6703 03 | ALCONOX |
| 6703 03 | ALDEHYDE AMMONIA |
| 5805 21 | Ale, see MALT BEVERAGE |
| 2618 20 | Alfalfa, see HAY |
| 2630 20 | Alfalfa, see SEED (Field) |
| 2213 04 | ALIDADE |
| 2213 05 | ALIDADE PART |
| 2421 80 | Alignment Tester, Wheel, see TESTER, SPECIAL AUTOMOTIVE |

**A comprehensive alphabetical index, including cross references, makes it easy to use the Catalog and code numbers.**

Division and the requisitioning agencies in securing the most efficient results from the State's investment in this project.

The author's conception of the advantages of the new catalog system, and the undesirable things that it prevents, are set forth in tabular form herewith.

In view of the magnitude of this procurement catalog program which is being set in motion to bring order out of chaos, it is difficult to form an estimate of the potentially tremendous savings it will make possible both in buying and in the elimination of lost motion and clerical time in the various agencies and in the Division of Purchase and Printing. Yet there is no question that we have already saved the State thousands of dollars by the investment in time, money and effort put forth in creating this new system.

We have now embarked on thirty term contracts covering various commodities, standardization programs, and pooling and consolidation of orders on a practical basis. Where we have established standards, we have saved as much as 10% to 15%, and feel that in some instances we are getting better quality products at less cost than formerly. By the establishment of ordering deadlines and consolidating orders for various products, we are helping our agencies to cut costs and stay within their budgets.

It is realized that we have a sizable and imposing catalog at the present stage of the program. However, by simplification and the elimination of small, infrequent items, we should be able to reduce its size and our record requirements by at least a third, which of course is desirable from numerous angles.

The important thing is that the gruelling spade work has been done. We are now ready to go forward with a program of education among our agencies and our suppliers, in using the Catalog. As has been already demonstrated by our preliminary activities, all of us will greatly benefit by the new system.

# When a high-strength steel is needed

## for severe cold-formed shapes like these bumpers

Specify → N-A-X HIGH-TENSILE STEEL

and get all of the requirements of SAE 950

When a material meeting the requirements of the high-strength, corrosion-resisting steels of SAE Specification 950 is used for severe cold-formed shapes, it will pay to investigate N-A-X HIGH-TENSILE steel—the low alloy steel with *built-in formability*. Its finer grain and higher hardness also result in brighter luster when ground and polished for plated parts.

**GREAT LAKES STEEL CORPORATION**
N-A-X Alloy Division
Ecorse, Detroit 29, Mich.

NATIONAL STEEL CORPORATION

# This Business of PURCHASING

## . . . casual comment from editor to readers about your business and our business

### *Small Order Problem . . .*

Whenever the question arises as to the cost of purchasing—and a good many companies are giving thought to this subject right now—attention inevitably focusses upon the subject of small orders, where the cost of purchasing is disproportionately high in relation to the value of the purchased merchandise.

Small orders are a part of every purchasing operation. For example, analysis of the purchases in one representative manufacturing company that spends upwards of $30 million a year, shows that about 90% of the total expenditure, classed as "major supplies", goes to less than 300 suppliers, while the remaining 10% of "minor supplies" are bought from more than 850 different sources. A substantial number of the orders amount to $25 or less; a few are under $5 each. Now, 10% of $30 million, or 10% of any purchase budget, is still a sizable factor, deserving of careful attention. But what to do?

In a conference at which this particular situation was under review, the discussion brought out the point that despite the efforts of the purchasing staff to keep the situation under control, it was likely to get worse instead of better in the months ahead. The reason: inventory policy. This company, like many others, has set a goal of inventory reduction; minimum stocks and maximum turnover are the watchwords of the day. Result: the small orders will become smaller, more frequent, and more expensive.

That's discouraging. Of course it doesn't relieve the purchasing department of its responsibility to do all it can to handle the matter just as efficiently and economically as possible, and several suggestions were made in that direction.

But the biggest thing that came out of this conference was the proposal to sit down with the inventory people and go over the whole situation on a factual cost accounting basis, to find out where the real balance of economy lies. The cost of carrying inventory always looks big to management. The cost of not carrying inventory is seldom known, but it may be even bigger. When it is added to the higher unit cost of materials on small orders, it becomes bigger still. Before issuing "across the board" instructions for percentage inventory reductions, it is wise to know what these costs are, to remember that inventory control and purchasing are both working toward the same objective of what is best for the company, and to determine where the balance lies.

High turnover of inventory may be a desirable goal in itself, but it breeds other evils. Remember that a single "piece of paper" like a stock requisition initiates a chain of corollary operations in ordering, receiving, recording, checking, accounting, and disbursement. It costs about as much in time and money to process a little order as a big one. Increasing the number of small orders not only adds to the work of purchasing, but multiplies paper work throughout the system in geometric ratio.

Again, when stocks are held at low levels, it invites evasion in the form of hidden inventories, systematically accumulated in crib stocks by foremen who are determined to have "plenty on hand" regardless of inventory policy. We know of one plant where a round-up of such supplies yielded a recovery of small tools and similar items valued at a quarter million dollars, that had been charged out of stores for use; the inventory was actually that much higher than the records had shown.

The moral of this is that inventory policies should not be based on theory or generalization, but on knowing the facts and knowing the costs. If that procedure were followed, there might be fewer small orders to plague purchasing departments and suppliers.

### *Regarding Marketing Policies . . .*

We recently had an interesting letter from an Advertising Manager, prompted by the fact that one of his Purchasing Agent customers had written to him commenting (favorably and constructively) on an advertisement that had appeared in our April issue. The A.M. was impressed.

Advertising Managers are not looking for "fan mail", as such. But it can be very helpful to them to know that their advertising, which is carefully prepared to inform as well as to influence prospective customers, is reaching the right audience through the right media, and contains the type of message most helpful to the readers. To say, "We saw your advertisement in PURCHASING", when sending an inquiry or order, helps the advertiser to appraise his own program and tends to raise the informative value of the important advertising pages.

This Advertising Manager further suggests that the Purchasing Agent would do well to take an interest in his own company's advertising, as well as that of the companies from which he buys. The P.A. is not expected to be an advertising expert, any more than he is expected to be a super salesman. Yet the sales fraternity constantly seeks and welcomes critique and counsel from purchasing men, because the buyer, as a constant target for all sorts of marketing effort, is in the best possible position to know how effective that effort is and how well it is directed.

Some Purchasing Agents still bemoan the fact that their position and labors and accomplishments are not fully appreciated, since the marketing policy of their own company is based on by-passing the purchasing office. Perhaps the fault lies partly in themselves for not more aggressively convincing their own sales and advertising people that the Purchasing Agent is the man who makes buying decisions.

# DARE TO COMPARE!

## See the Life-Linestarter® Strip-Down Test for Stepped-Up Maintenance

***Easier Installation*** . . . Because of standard NEMA mounting; straight-through wiring; pressure-type connectors; drawn cover.

***Easier Maintenance*** . . . Because of fewer moving parts; all front-removable. So simple that you can actually do it BLINDFOLDED.

***Longer Life*** . . . The chief electrician of a southern mill* says: "Our Life-Linestarters started and stopped the motor 5,700 times daily. After at least a million cycles, contacts showed little wear." J-30098

*Name on Request.

YOU CAN BE SURE...IF IT'S Westinghouse

Life-Linestarter

*SEE THE STRIP-DOWN TEST*

**AT NO OBLIGATION!**

*It will open your eyes to Life-Linestarter's Stepped-Up Maintenance and Performance. Mail the coupon today!*

**Westinghouse Electric Corporation**
**Box 868, Pittsburgh 30, Pa.**

Name_____

Title_____

Company_____

Address_____

City_____ State_____

# The Income Tax Collector Looks at Plant Property

## . . . . Some basic questions on depreciation, improvements, losses and paper profits

**By B. L. Gough**

PLANT property and equipment values can affect the amount of income tax your company will be called upon to pay. The facts of the case will of course determine the tax liability, but a great deal depends on how these values are handled accounting-wise. Better take a look at the situation now, because the tax man is going to do so. Here are a number of questions that have been raised about property-and-income tax, together with authoritative answers.

*Q. Can I figure depreciation on all of the property we own?*

On the books you keep for yourself—yes, if you wish to. But on bookkeeping for Uncle Sam's tax men, you cannot.

For example, the *land* on which your buildings stand—if you own it—cannot be depreciated. Land does not wear out and, unless it should actually be sold at a lower figure than the amount which was paid for it, it does not lose in value. In the event of a sale of land for a real dollar loss, the loss may be deducted as either a long term or a short term loss, depending upon whether it had been held longer, or less, than six months.

However, the *improvements* to the land—man-made buildings and equipment placed upon the land—do depreciate in value.

Moreover, any other property which has a useful life of one year or longer may be depreciated. If it's a mere supply item, designed to be used and then discarded, or something which lasts less than a year before becoming worn out, its cost may be charged off directly as an operating cost.

*Q. Over how long a time may the cost of various depreciable items of plant property be amortized?*

That depends on what the item is. The Bureau of Internal Revenue issues a "green book" of probable useful lives of business equipment. It may be had for a few cents from the Government Printing Office in Washington. The figures in this book are, of course, only average figures, considered as reasonable and applicable under average conditions. The governing factor in figuring out how long to carry depreciation on an item is the actual useful life of the property. Here, for example, are a few of the average figures on office equipment:

Typewriters—5 years.

Chairs—5 to 16 years.

Dictating machines—6 years.

Billing and bookkeeping machines, and check perforators—8 years.

Adding machines, calculators, duplicating machines, folding and sealing machines, and lamps—10 years.

Addressing and mailing machines, cabinets and files—15 years.

Desks—20 years.

Safes and vaults.—50 years.

*Q. What sort of bookkeeping does the Treasury demand in computing depreciation on property with useful life of longer than one year?*

The Treasury does not demand any special method. But the way you do it must conform to some established accounting practice, and it must be consistent. It can't be on one basis this year, and on another basis next year. Says the Bureau of Internal Revenue on this subject:

"The capital sum to be replaced by allowances for depreciation over the useful life of the property may either be deducted in equal annual installments or in accordance with any other recognized trade practice, such as apportionment to units of production. While no specific method is prescribed, whatever plan or method of apportionment is adopted must be reasonable and cannot be changed in a later year without the consent of the Commissioner. The methods in general use by taxpayers are the 'straight line' and the 'unit of production', the latter being used for the most part by taxpayers owning natural resource property.

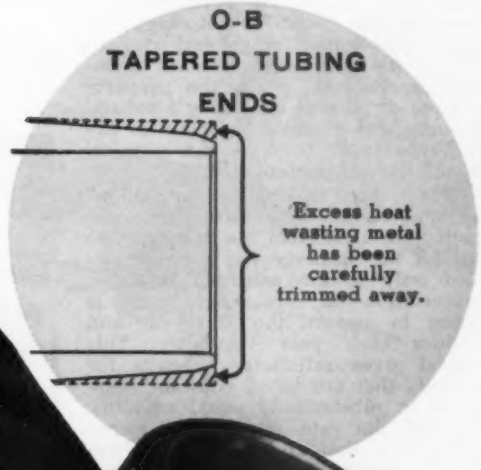
"Under the straight line method, the cost or other basis of the property, less its estimated salvage value, is deducted in equal annual installments over the period of its estimated useful life. Ordinarily, the depreciation deduction is computed by applying a depreciation rate expressed as a percentage of the cost or other basis to be recovered, but it also may be computed by dividing that cost or other basis by the estimated useful life. The estimated useful life is subject to modification in the light of conditions known to exist at the end of each taxable period. Ordinarily, depreciation computed by this method represents the actual diminution in service value from year to year as closely as the depreciation computed by any other method. The practical simplicity in accounting records required, and the ease and facility by which revisions or changing life estimates may be applied, tend to make this method the most acceptable one for general use.

"Unit of production method is peculiarly adaptable in determining depreciation for property used in the exploitation of natural resources, such as mineral deposits or timber, the available reserves of which limit the useful life of the depreciable property. Under such circumstances, the rate of exhaustion of the natural resources measures the useful life of the physical property. By dividing the cost or other basis, less estimated salvage value, by the estimated available reserves or raw material, a unit cost is obtained which, when multiplied by the units produced during a given year, gives the depreciation sustained for that year. Depreciation, at least to the extent of that based upon decay and normal obsolescence, is allowable and should be deducted during the period when property is idle or is producing at a rate below normal.

"In the case of depreciable property the useful life of which is not limited by sources of supply, however, uncertain and unpredictable factors arise to such an extent as to make application

# FASTER HEATING—EASY TO SOLDER

**A minimum of torch time brings the tapered tubing ends on O-B valves to proper soldering temperature. Heat distribution is even, a better flow of solder is produced, and a completely filled, leaktight joint results. The next time you have a tubing job, ask your distributor for O-B solder-types — the valves with the fast heating, easy soldering tubing ends.**




No. 28 Line Gate Valve
$\frac{3}{8}$ to 2-inch, 125 pounds
W.S.P.- 200 lbs. W.O.G.
Also available with rising stem - Ask for No. 29 Line.

# O-B VALVES

BRONZE GLOBES, ANGLES, GATES AND CHECKS
FOR INDUSTRIAL SERVICE

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of the method very difficult, if not impossible. Use of the method must be confined to those items in the property account whose useful lives are determined by the factors of wear and tear, or where the extent of use or the rate of production measures the rate of exhaustion of the property. When such a separation can be made, it is then necessary to forecast for those items the useful lives of which are controlled by extent of use, the total number of units to be produced during their useful lives, in order to obtain a cost factor to be applied against units produced each year in arriving at the depreciation allowance. For most property it is not possible to obtain this information with any reasonable degree of accuracy and, therefore, the method is not considered an acceptable one for general application to the machinery account of industrial concerns, or to the property of those companies exploiting a natural resource with reserves sufficient to extend operations beyond the physical life of the original plant.

"Under the declining balance method, the amount of depreciation is subtracted annually from the cost or other basis of the property and the rate applied only to the resulting balances. Depreciation on any single item is largest in amount the first year and declines each year thereafter. This method gives satisfactory results for accounts that are being constantly replaced in substantially equal amounts, provided the rate used is somewhat higher than that applicable under the straight line method. Its best application is to those accounts for property in which the greater proportion of the production is confined to the early part of the useful life.

"In retirement accounting for depreciable property, the cost of property retired each year is credited to the capital asset account and, less net salvage (actual or estimated), charged to expense in lieu of annual provisions for depreciation. When property acquired prior to March 1, 1913, is retired, the cost should be reduced to the extent of the depreciation sustained to March 1, 1913, in arriving at the proper deduction.

"While this method results in the ultimate recovery of the total investment in depreciable property and tends to approximate straight line depreciation over a period of years, there may be considerable fluctuation in the amount of the deduction from year to year due to the retirement of unusually large and expensive units in some years. This distortion can be avoided to some extent by anticipating the retirement of such units when the year of retirement can be predicted with reasonable accuracy and spreading the cost or other basis, less estimated salvage, over the estimated remaining useful life."

*Q. A storehouse building where supplies and records were kept burned to the ground with all its contents. Can we claim it as a loss?*

Certainly. However, there is a "but" attached to this go-ahead. It hinges around how much of the loss your insurance company made good.

Let's say that the building was worth $5,000, and its contents another $2,000. Insurance fully covered both, and the insurance company sent you a check promptly. You have then actually suffered no loss in money (Uncle Sam doesn't count headaches or lost motion in making up for the damage) and so you cannot claim a loss here.

Suppose, though, that only the building was insured, and that for only $4,000. You had a net casualty loss, then, of $1,000 on the building, plus $2,000 on the contents. You can claim full tax deduction for this $3,000 business loss.

In other words, it works this way: The loss may be claimed only to the extent that insurance did not

repay the money. If your firm had no insurance, claim all the loss. If insurance partially covered the loss, claim only the *net* loss. If insurance paid off the full fire loss, you cannot claim a deduction on your income tax return.

*Q. Do the same principles apply in the case of storm damage?*

They do. You can claim any casualty or accident loss only to the extent that it was not made good by insurance reimbursement.

*Q. What happens when the insurance pays more than the cost? In our case, a building that cost $10,000 to erect in 1940 burned down. It was insured for present replacement value—$15,000—and the insurance company paid in full. Do we have to pay tax on that "paper profit" of $5,000?*

That depends. Did the company immediately spend $15,000 to buy or build another structure to be used for the same purpose? If so, the paper gain is not taxable, since it went for replacement of the loss with a similar facility. But if the money was spent for something else, then Uncle Sam wants his tax share of the "gain" on the fire.

Let's consider another case. Joe Jones' building cost $5,000 to put up, back in 1935, but Joe knew it couldn't be duplicated for anything close to that figure at today's costs, so he insured it for $11,000. In 1950, a windstorm demolished the structure, and Joe's insurance agent handed him a check for $11,000. Joe then had a new building put up on the site of the old one. When he had paid all the bills for it, he found that he had spent $7,500. He had a "profit" of $3,500 left over, out of his paper gain of $6,000 on the fire.

Uncle Sam did not demand tax on the full $6,000. Since the insurance money had been spent for another building like his old one, any part of the extra money that went for this purpose was tax free. But, explained the Collector of Internal Revenue, the $3,500 over and above necessary expenses to replace the building had to be reported on the tax return.

*Q. What happens to the charge-off for depreciation when improvements are made to the property?*

Here is the official word from the Treasury:

"Amounts spent in restoring property or in making good the exhaustion thereof, for which an allowance is or has been made, or amounts spent for replacements which arrest deterioration and appreciably prolong the life of the property, are capital expenditures and, strictly speaking, should be accounted for by deducting from the asset account the cost of the item or part thereof which is replaced, and adding to the capital account the cost of the new part plus the cost of installation. The cost of the item removed (adjusted for salvage, if any) should be charged to the depreciation reserve. As a practical matter, it is permissible to charge the cost of rehabilitations or small replacements directly to the depreciation reserve, leaving the capital account undisturbed, provided there has been no material change in price levels and no substantial improvement in the new equipment. Replacements in the nature of betterments, however, should always be added to the depreciable asset account.

"The cost of incidental repairs which neither materially add to the value of the property nor appreciably prolong its life, but merely keep it in an orderly efficient operating condition, may be deducted as expense items."

*Q. What happens when we sell, dismantle, or junk an item of depreciable property?*

Here, in his best Federalese, is what Uncle Sam advises:

"Salvage value is the amount reali-

(*Please turn to page* 358)

# Why Burn Down Your House for Roast Pig?

IN ancient China, men ate meat raw. But one day, while Ho-ti the swineherd gathered mast for his hogs, his stupid son Bo-bo, playing with fire, burned down their straw hut. Bo-bo sniffed the odor of burnt pig. He touched one to see if it was still alive, scorched his fingers, put them in his mouth and was amazed at the delicious taste. Father came home and caught his son devouring a pig. Ho-ti tried one, too, found it intoxicatingly sweet and satisfying.

Thereafter, neighbors observed feverish building of new straw huts at Ho-ti's, followed always by conflagrations. The secret leaked and fires became widespread. In a few weeks even his Lordship's town house was on fire. Finally, straw for hut building disappeared from the market and young pigs could not be had for love or money. At last, after many generations, a wise man arose who said that a pig could be roasted without burning down an entire house.

Thousands of years later, we Americans feast deliriously on "roast pig." Accompanying our delights are fires of inflation, which can destroy our values just as certainly as the roasting of Ho-ti's pigs consumed his earthly possessions. But surely we need not await the coming of a sage to tell us not to burn down our houses to enjoy the delights of roast pig!

Let us unite to stop the ruinous flames of inflation. Curb wasteful and unnecessary government spending. Balance our Federal budget. Control our national debt and reduce taxes. Only in this sane way can we produce more straw and enjoy our houses, raise more pigs and eat them, too.

QUALITY V YOUNGSTOWN SERVICE

## The Youngstown Sheet and Tube Company

General Offices--Youngstown 1, Ohio
Export Offices--500 Fifth Avenue, New York

MANUFACTURERS OF CARBON ALLOY AND YOLOY STEELS

**RAILROAD TRACK SPIKES - CONDUIT - HOT AND COLD FINISHED CARBON AND ALLOY BARS - PIPE AND TUBULAR PRODUCTS - WIRE - ELECTROLYTIC TIN PLATE - COKE TIN PLATE - RODS - SHEETS - PLATES.**

# Warring on Waste in War Procurement

**By A. N. Wecksler**

Medical supplies were among the first items to come under Joint Agency procurement for requirements of all the armed services.

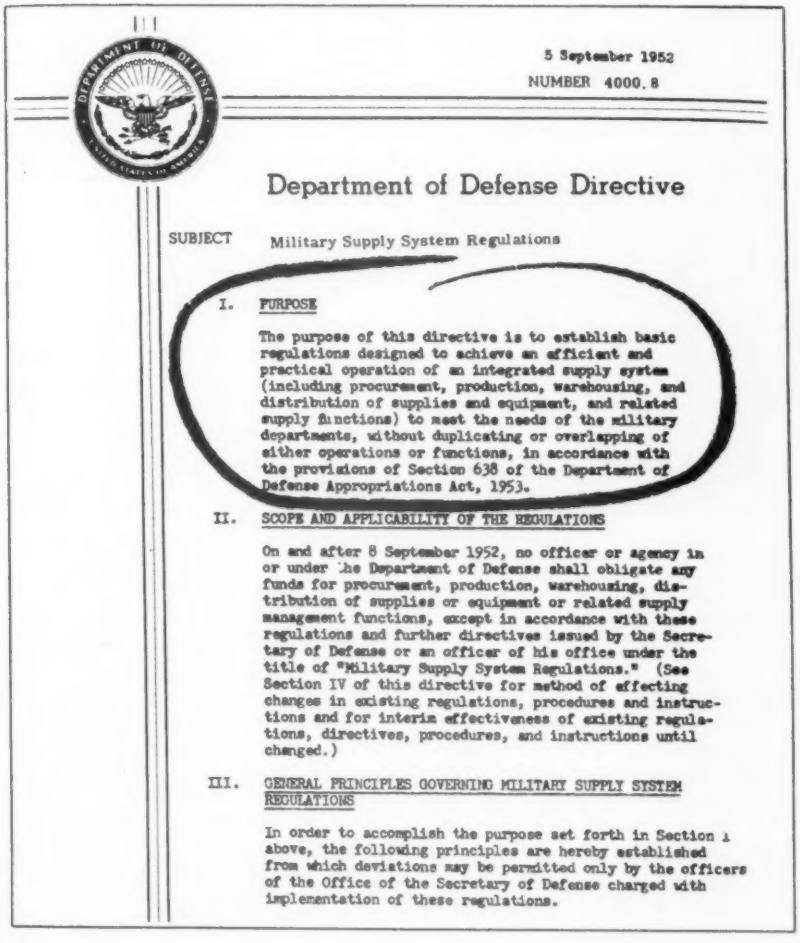
Photos by courtesy of U. S. Department of Defense.

IN all the annals of military history, procurement of supplies has been looked upon as a military function—and as the whole function of war is regarded as wasteful, there has been a general acceptance of waste as a part of purchasing for the armed services.

Now by force of necessity, there is no longer any room for waste in military buying. Projected for the next 10 years is a national economy of which a substantial percentage will be devoted to maintaining large military forces. The percentage of the economy which will go to the military may vary as the threat to peace blows hot or cold based on Soviet maneuver, but the fact remains that somewhere between 15 and 20% of the gross national product is expected to go for military requirements.

This rate of expenditure puts a different face on military spending. It is not possible to provide all branches of the service with all that they can consume or warehouse. Aside from the strain on the economy, public reaction has forced the military to view procurement as a professional function rather than a military function.

Obviously this change has not been sudden. It began with the Armed Services Procurement Act



5 September 1952
NUMBER 4000.8

Department of Defense Directive

SUBJECT Military Supply System Regulations

I. PURPOSE

The purpose of this directive is to establish basic regulations designed to achieve an efficient and practical operation of an integrated supply system (including procurement, production, warehousing, and distribution of supplies and equipment, and related supply functions) to meet the needs of the military departments, without duplicating or overlapping of either operations or functions, in accordance with the provisions of Section 638 of the Department of Defense Appropriations Act, 1953.

II. SCOPE AND APPLICABILITY OF THE REGULATIONS

On and after 8 September 1952, no officer or agency in or under the Department of Defense shall obligate any funds for procurement, production, warehousing, distribution of supplies or equipment or related supply management functions, except in accordance with these regulations and further directives issued by the Secretary of Defense or an officer of his office under the title of "Military Supply System Regulations." (See Section IV of this directive for method of effecting changes in existing regulations, procedures and instructions and for interim effectiveness of existing regulations, directives, procedures, and instructions until changed.)

III. GENERAL PRINCIPLES GOVERNING MILITARY SUPPLY SYSTEM REGULATIONS

In order to accomplish the purpose set forth in Section I above, the following principles are hereby established from which deviations may be permitted only by the officers of the Office of the Secretary of Defense charged with implementation of these regulations.

of 1947, later amended in 1949. It came as a result of the pointed criticisms of Government procurement policies by the Hoover Commission (Committee on Organization of the Executive Branch of the Government). Congressional committees have also been highly critical of military purchasing practices.

## Joint Procurement

Traceable to the need and demand for economy and professional competence in military purchasing is the assignment of roughly 82% of armed service procurement to some form of joint activity in which the services cooperate in placement of purchase orders.

There are three forms of such assignment. The most dramatic is the **Single Service Procurement,** under which one branch of the service buys a specific category of supplies for all the military services. For example, the Army buys all the tanks and automotive equipment for all the services; the Navy buys all the ships and loading craft, and the Air Force buys all standard photographic equipment.

Second form of assignment is the **Joint Agency,** under which a single agency buys all of a group of commodities, and is staffed by members of all the military services using these commodities. There are three such agencies, the third and latest to have been established (activated October 1) is known as "The Armed Services Textile and Apparel Procurement Agency". Other two such agencies purchase petroleum products and medical supplies.

Third form of procurement assignment is a system of plant cognizance in procurement of aircraft. Aircraft producers are assigned to the services, primarily on the basis of their major output going to the service to which they are assigned. While this does not preclude the plant from producing aircraft for other military services, the service with cognizance has jurisdiction over the total output of the plant.

Roughly 18% of military procurement is not assigned. This group consists of such items as electronics, guided missiles, machine tools and metal working machinery, and raw materials. Military spokesmen maintain that the purchase of such items does not lend itself to assignment—in some instances, because they are still in an experimental phase, and in some cases, because the requirements of the services are so specialized as to make assignment impractical.

## Toward Professional Buying

Important point to keep in mind is that the consolidated purchasing techniques, often and erroneously referred to as "single service procurement", will not produce great and startling economies in themselves. However, assignment of pur-

**Directorate of the new Armed Services Textile and Apparel Procurement Agency, which was activated on October 1**

Rear Admiral M. L. Royer
Navy

Major General G. A. Horkan
Army

Brigadier General W. G. Bain
Air Force

Major General W. P. T. Hill
Marine Corps

When military supplies are needed, they are needed badly. This shipment is being loaded on planes of the U. S. Far East Air Forces Combat Cargo Command at an air base in Japan for delivery to encircled units of the First Marine and Seventh Infantry Divisions in the Chosin Reservoir area in Korea.

chasing does serve to take purchasing out of the hands of the individual services where purely military considerations would be most compelling, and by centralizing the activities makes possible a more professional look at the problems of military purchasing. Also a saving in overhead and administration will result.

Real and greatest economies will come from a policy which is a direct corollary of the purchasing function —that of supply management.

On September 5, the Department of Defense issued a directive which, if followed with vigor, will result in a very substantial scaling down in the duplication of supply functions throughout the military services.

The new policy as contained in the September 5 directive takes in the wide range of supply management activities—warehousing, inventory control, duplication of commercial and industrial services, distribution, cataloging and standardization, conservation, utilization and disposal, and transportation and traffic management.

In addition, the new policy directive calls for the establishment of a training program for the recruitment and training of competent civilian and military personnel to serve in procurement and related supply management functions. The objective will be to establish a professional staff of PA's and supply management career men who will not be subject to rotation in assignment as practiced by the services. This will mean that purchasing agents will be trained for the job of military buying, and will not be then shifted to some other assignment which does not require a background in purchasing.

In terms of savings in manpower, facilities and money, one of the most important sections of the Department of Defense directive is the one relating to commercial and industrial-type facilities.

Such facilities, including warehouses, motor repair shops, bakeries and laundries operated by any of the military departments, will now be made available to other military departments, and will be surveyed to determine whether they should be retained at all. If privately owned and operated facilities are available and can be used economically, the military departments will be required to close down their own operation and use the privately owned facility. Determination on whether to operate or close down a military department's commercial-type installation will be based on a cost accounting procedure.

In addition to closing down duplicating facilities, the military departments will not in the future be permitted to establish such facilities if the requirements can be met either through existing facilities operated by another military department, or by privately operated facilities.

Though there is no estimate of how great an economy will result from this new policy, military procurement analysts maintain that the savings will be considerable.

### Central Control Points

Substantial savings are also anticipated from the adoption of a new policy on supply and inventory control. The policy requires that within each military service (Army, Navy, Marine Corps and Air Force), only one supply and inventory con-

(*Please turn to page* 362)

War in itself is inherently wasteful, but wasteful procurement of military supplies is unnecessary and will not be tolerated.

Problem in procurement. Marine staff sergeant displays a set of winter clothing that the well dressed combat soldier will be wearing.

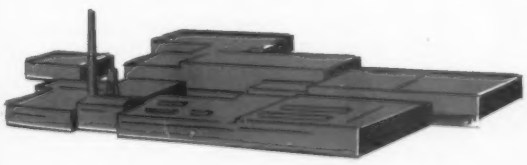
**stabilized absorbency means superior performance with**

# Fort Howard Paper Towels

*Stabilized Absorbency* is only one of the important "plus values" in Fort Howard Paper Towels — the "plus" that provides effective drying power regardless of age.

In addition, Fort Howard Towels offer real economy through *Controlled Wet Strength,* which keeps towels strong and firm without sacrificing softness or pliability. And Fort Howard Towels are *Acid Free.* These "plus values" are reasons why Fort Howard Towels dry faster, better, more economically.

Fort Howard supplies a complete line of handsome cabinets to fit all its towels . . . and there's a Fort Howard Towel to fit any folded towel cabinet. For towels that are always available, consistently high quality, and priced right, call your Fort Howard distributor salesman today!



Fort Howard Towels Fit Any Folded Towel Cabinet

For 33 Years Manufacturers of Quality Towels, Toilet Tissue and Paper Napkins

Fort Howard Paper Company, Green Bay, Wisconsin

*Know your rights and your liabilities*

# Keep the Law on Your Side

**By Leo T. Parker**

GENERALLY speaking, you cannot win a law suit unless you have the law "on your side". In other words, if you conduct your purchasing business haphazardly without sufficient knowledge of the law to enable you to prepare to win unavoidable suits, you cannot expect your lawyer to win the suit you already have lost.

Recently the higher courts rendered several outstanding decisions, knowledge of which will enable readers to prepare to win undesired legal controversies. I shall briefly review these important and outstanding decisions and explain why so many purchasers unfortunately are rendered adverse verdicts.

### Complete Possession

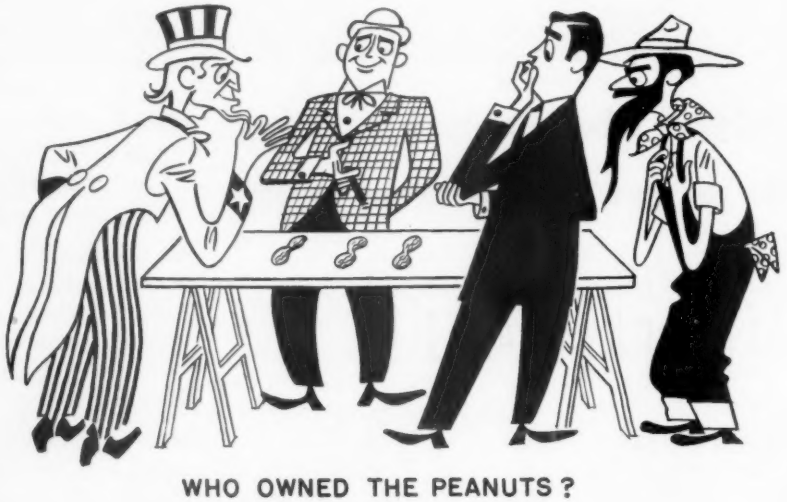
According to a late higher court decision, if a purchasing agent is in complete possession of merchandise he purchased for an employer, the purchasing agent is fully liable and responsible for loss or damage to the merchandise. Also, a late court held that the purchasing agent makes himself liable for loss of merchandise if allocation reports are executed and filed *after* the merchandise was destroyed.

For illustration, in Greenwood Products v. Commodity Credit Corporation, 188 Fed. (2d) 401, the testimony showed facts as follows: The Greenwood Products Company entered into a contract with the Commodity Credit Corporation under which the former agreed to act as a purchasing agent and purchase for the account of the Corporation all farmer stock peanuts offered for sale by growers in a designated area, for which purpose Greenwood Products Company advanced its own funds.

The peanuts were stored in a warehouse which burned, destroying the peanuts Reports and remittances were in various stages of progress when the fire occurred. As to some, Greenwood had submitted capital allocation reports and had paid the growers therefor. There were other allocated peanuts, recently received from growers, as to which no allocation reports had been made by Greenwood Products Company, nor had the purchase price been paid to growers. *After the fire,* however, allocation purchase reports were duly executed for these, and the growers were paid by Greenwood Products Company.

The Commodity Credit Corporation sued the Greenwood Products Company for $133,506.71, the value of the peanuts on which allocation reports had been made before occurrence of the fire, and also on which the Greenwood Products Company had supplied allocation reports after the fire. In holding the Greenwood Products Company liable, the higher court said:

"Greenwood Products Company was in complete possession of the peanuts. Although allocation reports had not yet been submitted for some of the peanuts, their allocation was confirmed by submission of such reports after the fire. In these circumstances, the sale of the allocated peanuts was so far complete as to constitute Greenwood Products Company the beneficial owner thereof and to cast upon it the risk of loss. Accordingly, Greenwood Products Company is liable."



WHO OWNED THE PEANUTS?

In view of this new and leading higher court decision, purchasing agents will do well and thereby reduce their chances for financial losses, by giving immediate possession of merchandise to the employer whereby the latter automatically assumes full responsibility and liability for loss of or damage to the merchandise.

# BOOST PRODUCTION...

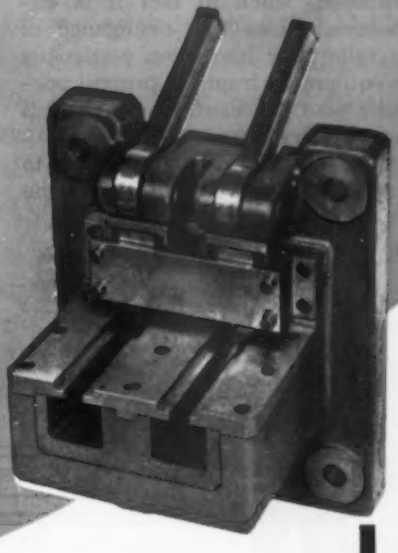
## MAKE DIFFICULT PARTS

# *Interchangeable*

Above: Broaches, consisting of five individual sections mounted in each holder, rough and finish two complete parts per stroke.

Below: Two-station, cam-type clamping fixture guides broaches throughout the cutting stroke.

Parts before and after broaching.



# BROACHES BY Continental

The half-round slots in these stainless steel aircraft tubing clamps were formerly drilled and reamed. The process was slow. To make matters worse, no two parts were exactly alike.

Continental engineers designed broaches and fixture to do a completely uniform job in far less time. Parts are now fully interchangeable.

For information on how Continental Broaches may help increase your production, with improved accuracy and finish, call in your local Ex-Cell-O representative, or write, wire or phone Continental in Detroit today.

52-9

**CONTINENTAL TOOL WORKS** DIVISION OF EX-CELL-O CORPORATION DETROIT 32, MICHIGAN

Recently a court held that a seller may place merchandise and a certificate of sale in the hands of a dishonest purchaser who defrauds a subsequent purchaser, and the seller is not liable although he failed to investigate the character and past reputation of the original purchaser. Also, this higher court rendered an unusual decision to the effect that failure of a seller to note on a certificate of sale that he holds a mortgage on the subject of the sale does not render him liable to subsequent innocent purchasers, providing no state law requires, on a bill of sale, a notation indicating encumbered merchandise.

The following decision therefore answers the legal question recently presented by a reader, as follows: "If a seller of merchandise or equipment issues a certificate or bill of sale to a purchaser without a notation thereon that the subject of the sale is mortgaged, or otherwise encumbered, when in fact it is encumbered, does this negligence of the seller bar him from possessing the equipment from the present possessor who innocently purchased it from the first purchaser?"

As above indicated, according to this late higher court decision, the

**MUST THE LETTER BE SIGNED?**

answer is "No", if the certificate or bill of sale is *not one required by law.*

For example, in Howard Trust Company v. Jones Company, 238 S. W. (2d) 905, the testimony showed facts as follows: Certain equipment was sold to one Valiquette by Harold Mayo, a dealer. This sale occurred in Vermont, where both Valiquette and Mayo resided. The sale was made on a conditional sales contract. The sale price was $1,300. There was a cash down payment of $225. The conditional sales contract provided:

"Purchaser agrees: that title to said property shall not pass to the purchaser until all sums due under this contract or rearrangements thereof, together with interest after maturity and all other debts and money obligations arising out of this lien, are fully paid in cash; . . . not to remove property from the state or transfer any interest therein without written consent of the seller. . . "

Two very important points are, first, at the time of sale Mayo delivered to Valiquette a bill of sale and certificate on a printed form. There was no notation on this certificate that a lien was on the equipment.

The second important point is that Mayo had never had any previous dealings with Valiquette, and Mayo's acquaintance with Valiquette covered a period of only two or three months. The only contact that Mayo ever had with Valiquette was when he talked to him about this sale. Mayo knew nothing about Valiquette's business habits.

Soon afterward Valiquette sold the equipment to the Jones Company for $1,090, and assigned his certificate and bill of sale to this company. When Mayo learned that Valiquette had sold the equipment to the Jones company, he sued the latter company for the amount owed by Valiquette.

During the trial the counsel for the Jones Company argued that Mayo was not entitled to a favorable verdict because Mayo, dealer, had issued to Valiquette the above mentioned certificate which had no lien notation on its face and that by reason of placing false certificate in the hands of Valiquette, Mayo enabled Valiquette to indicate that he was the owner of the equipment, free and clear of any encumbrances, liens, or conditional sales contracts.

The higher court refused to hold that this act of Mayo defeated his right to recover a favorable verdict from the Jones Company, because Mayo had violated no state law. The court said:

"The theory presented was that, by delivery to Valiquette of the certificate without noting thereon that the sale was conditional, Mayo made it possible for Valiquette to show ownership free and clear of liens and encumbrances, and enabled Valiquette to defraud defendants (Jones Company). It is not clear from the evidence what purpose was intended to be served by the certificate in question. It was on a printed form. . . . It was merely a memorandum containing a statement that was, in fact, true. There was nothing in the record to show that Mayo gave the document to Valiquette intending that it be acted upon as a representative of absolute ownership in Valiquette. Nor did the mere giving of said document raise a presumption that it would likely be so used."

### *Unsigned Letter is Valid Contract*

Recently a reader wrote in part, as follows: "A couple of years ago you gave me a higher court citation which assisted my lawyer to win a suit filed against me, for which service I am appreciative. Now, I need another citation to help win another suit. My present legal controversy is with a seller who claims the sale contract between us was verbal and invalid, and that he is not liable on the contract. I received an unsigned letter from this seller acknowledging the verbal contract. Do you know of a higher court case which holds that an unsigned letter is good evidence, or makes an enforceable contract?"

According to a late higher court decision, an unsigned letter is a valid and enforceable contract, if the one who receives it does not immediately answer stating that he will not be bound by its contents. In other words, if he proceeds to act in accordance with the contents of the letter, it results in existence of a valid contract.

For example, in Dallman Plumbing Supply Company v. Smith-Blair Company, 228 Pac. (2d) 886, testi-

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ZONE HARDENING is a completely automatic heat treating process by which the inner race ring of SEALMASTER Ball Bearing Units is hardened—through the ball path section only! (See 1 in cutaway view.) The extended part of the inner race is left in its original metallurgically soft tough state. Hardened set screws are mounted through this soft portion of the race (See 2 and 3), permitting race-to-shaft locking with increased holding power and greater resistance to shock and vibration. Firm lock of bearing to shaft minimizes danger of fretting corrosion and eliminates shaft wear.

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. . . prevents bearing from spinning in its housing and prevents fretting corrosion between housing and bearing, yet permits sufficient shaft alignment without seal distortion (See 5 and 6).

**BALL RETAINER**
. . . rides on the ground inner surface of the outer race ring (See 7), eliminates ball wear, trapping grease and preventing its churning in the bearing.

*SEALMASTER Units are available in many special housings as well as in the complete standard line. Write us for full details on special units. Ask for a copy of SEALMASTER Catalog 845.*

*Patented—exclusively SealMaster's

## SEALMASTER BEARINGS

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**A DIVISION OF STEPHENS-ADAMSON MFG. CO.**

FACTORY REPRESENTATIVES AND DEALERS IN ALL PRINCIPAL CITIES

mony showed facts as follows: The Dallman Plumbing Supply Company is a corporation engaged in the business of retail and wholesale selling plumbing supplies. The Smith-Blair Company is a manufacturer of plumbing equipment. The Dallman Plumbing Supply Company and Smith-Blair Company made a verbal contract under which it was contended by the supply company that it was to have the exclusive agency of the manufacturer's products in that area.

In subsequent suit, the Dallman Plumbing Supply Company proved that it wrote Smith-Blair Company a letter as follows:

"In accordance with the terms of our verbal agreement, we are to act as your sole distributor in Northern California and will receive a commission of 20% on all orders. . ."

This letter was not signed, but admittedly it was received by the Smith-Blair Company.

In view of this letter, the higher court held the Dallman Plumbing Supply Company entitled to recover 20% commission or $8,473.20 on merchandise sold.

"The court found that the letter of October 20 was the contract of the parties and that said contract remained in full force in the sum of $8,473.20 for commissions at the rate of 20% on sales made by defendent (Dallman Plumbing Supply Company)."

Hence, purely from evidence of the unsigned letter, which the addressee received, and did not contradict, the higher court held the supply company entitled to receive 20% commission on merchandise sold for the manufacturer.

### *Wrong Charge*

Considerable discussion has arisen from time to time over the legal question: "If a seller accepts money for merchandise he knows he will not deliver to the purchaser, is he guilty of theft or larceny?" The answer is "No," according to a late higher court decision.

For example, in Huff v. State, 54 S. E. (2d) 446, it was shown Huff, the owner of the Ideal Marble and Granite Company was indicted for larceny.

A person named Noggle testified that the owner of the Ideal Market and Granite Company was one Huff, who had signed a contract to deliver a tombstone to Noggle, who paid $70 for the stone.

During the trial, another person testified that he had paid the Ideal Marble and Granite Company $621.78 for merchandise which was never delivered, nor was his money returned.

The lower court convicted Huff, but the higher court reversed the verdict, refusing to convict him, saying:

"Even if the defendant (Huff) never really intended to provide the tombstone at all but fraudently pretended he would do so for the purpose of obtaining the money and applying it to his own use, and while the facts may show great moral turpitude on the defendant's part, they do not render him guilty of larceny".

Nevertheless, the court indicated that although a seller who fails to deliver purchased merchandise cannot be prosecuted for the crime of larceny, he may be convicted for obtaining money under false pretenses if the testimony proves that when accepting payment he had no intentions of delivering the merchandise to the purchaser.

### *What is Fraud?*

Unless one knows the legal definition of the term "fraud" it is impossible to know positvely whether he has been legally defrauded.

Accordng to a late higher court decision, fraud is "deception" practiced for the purpose of causing either loss or hindrance to another. Otherwise, there can be no legal fraud.

For illustration, in Saks and Company v. Barbee, 210 Pac. (2d) 864, a man named Barbee decided to purchase a fur coat for a woman named Earl. The couple together visited a store. While there, Barbee informed a salesman that he wished to purchase a fur coat for Earl. The couple were shown a mink coat priced at $5,000. Barbee expressed a willingness to pay as much as $4,000, but no more. The salesman emphatically rejected the offer several times.

While Barbee was absent from the store, Earl informed the salesman that if he would sell the coat for $4,000 to Barbee. Earl would pay the difference between $4,000 and the purchase price, including taxes. Then the salesman sold the coat to Barbee for $3,981.25 and Barbee signed the sales slip. Without knowledge of Barbee, Earl paid to the seller $916.30 in fulfillment of her verbal agreement.

**WAS THE BUYER DEFRAUDED ?**

In subsequent litigation Barbee contended that the seller had practiced fraud because he had secretly accepted $916.30 from Earl and that, therefore, the contract of sale between the seller and himself was void on the grounds of fraud.

The higher court refused to hold that Barbee could rescind his purchase contract, and held the sale contract between Barbee and the seller valid.

This court explained that since the seller had not practiced deception for the purpose of causing a "loss or hindrance" to Barbee, there was no fraud involved. The court explained further that as Barbee had been willing to pay $3,981.25 for the coat as a gift to Earl and his offer was accepted by the seller, the fact that Earl had paid an additional sum of money to the seller in no way constituted a fraudulent act on the part of the seller.

If, on the other hand, the seller had collected more than $3,981.25

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from Barbee and secretly paid this difference to Earl, the seller would have been guilty of fraud.

### *Voluntarily Paid Overcharge is Not Recoverable*

Considerable discussion has arisen from time to time over the question: "If a purchaser voluntarily pays an overcharge for merchandise can he recover the overcharge?"

According to a late higher court decision, the answer is "No.."

See Willis, 132 So. (2d) 36, where a purchaser of oils and other accessories voluntarily paid all bills presented to him by the seller. Later he sued the seller to recover overcharges. The higher court refused to award the purchaser a favorable verdict, and said:

"Money voluntarily paid under a claim with full knowledge of the facts on the part of one making the payment, cannot be recovered back unless there is fraud or concealment or compulsion by the party enforcing the claim."

On the other hand, all higher courts agree that if any debtor pays a bill on threat, duress, fraud, or compulsion, he can recover the overcharge.

For example, in Murphy v. Brill Company, 83 N. E. (2d) 166, the testimony showed facts, as follows: A man named Murphy purchased a fifty-two foot motor cabin cruiser through a yacht broker in Florida. At the time the boat was purchased, it was in a shipyard which was engaged in the business of building and repairing boats. Murphy asked the superintendent of the yard how much it would cost to "put the boat in shape". The superintendent told him it would cost between $5,000 and $6,000, "a low of $5,000 and a top of $6,000", and that he would furnish specifications of what the repairs were to include. Within a few days after that the superintendent furnished specifications containing ninety-four items. After receiving the specifications Murphy told the superintendent to go ahead with the work.

Within a month Murphy received a bill for $2,595.64 for work done on the boat between February 21 and March 9. Murphy told the superintendent that he thought the amount was very high for the number of days work involved, but paid the bill. Later a bill covering the period from March 10 to March 19 for $3,009.06 was sent to Murphy who told the superintendent that he thought the bill was all out of proportion to the amount of work done on the boat. The superintendent told him that "the bills had to be paid when they were presented, or the work would stop on the boat." Then Murphy paid the bill.

Subsequently a third bill for the period from March 20 to March 27 in the amount of $1,998.85 was rendered. Murphy complained to the superintendent who told him, "There isn't anything we can do about it. You'll have to pay for it. You can't take it out until these things are paid, and if you don't make this payment, work will stop." The superintendent also told Murphy that no other service station would finish the job until the bill was paid as he held a lien. After remonstrating further, but to no avail, Murphy paid the bill.

Later Murphy took possession of the boat and then sued the company. The jury awarded Murphy $8,330.90, the difference between the total amount of the bills paid by Murphy and the estimate made by the superintendent before the work was started.

The higher court approved the jury's verdict. This court explained that while Murphy could not have recovered overcharges voluntarily paid, yet these bills were not, in a legal sense, voluntarily paid since the various bills were paid by Murphy because of the fact that the superintendent had stated the company had a lien on the boat and no other service company would finish the job.

In other words, the court decided that the superintendent had by duress and compulsion forced Murphy to pay the bills, whereby Murphy had a legal right to sue and recover the overcharges.

The Robinson-Patman Act prohibits price discrimination in any and all forms, methods and plans.

For example, in 178 Fed. (2d) 150, the higher court held that a manufacturer who furnishes certain of its customers and agencies with services of demonstrators to push the sales of its products, while denying the same favor to all other customers, is guilty of violating the Robinson-Patman Act, which prohibits price discrimination. This court said:

"It is enough that the wrong be one of federal cognizance; its consequences are actionable whether or not they affect interests which are also of federal cognizance."

### *Patent Laws are Complicated*

While the average reasonably prudent purchaser may determine with considerable certainty whether one trademark infringes another trademark, this is not so with respect to patents. A great deal of study, knowledge, experience and ability is required to decide whether a particular patent is infringed. This is important because a purchaser of infringing merchandise may be prevented from reselling it, and if he does resell it he is liable for three times the profits he earns on resale of the infringing merchandise. See Sutherland Paper Company v. Grant Paper Box Company, 183 Fed. (2d) 926.

Here is a dependable rule for determining whether a patent is invalid and no liability arises from its infringement. A patent is void and

(*Please turn to page* 364)

**MUST THE OWNER PAY THE OVERCHARGE ?**

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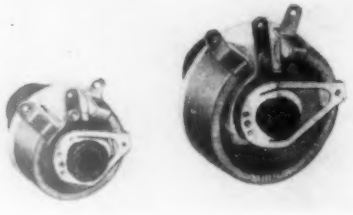
WELDING PRODUCTS

# New Products Ideas

## Ring Type Rheostats Give Smooth Control



Ward Leonard Electric Company's new 25 and 50 watt Vitrohm ring type rheostats are said to feature a new contact arm and drive shaft assembly that furnishes smooth, close control with no backlash. A balanced spring steel contact arm that maintains uniform contact pressure is interlocked directly to a Mycalex insulating hub molded to the drive shaft. This construction gives direct operation between control knob and contact shoes. Smooth control is further obtained by use of two metal graphite self-lubricating contact shoes. The rheostats are designed for rheostat or potentiometer use in electronic and industrial control equipment. Ward Leonard is in Mount Vernon, N. Y.

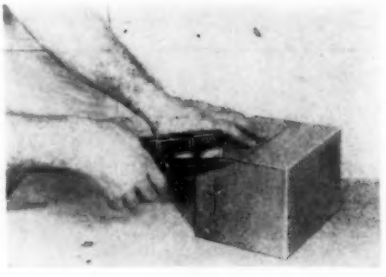
## High-Nickel Alloys In Ultra-Thin Gages

High-nickel alloys, rolled to precision tolerances and ultra-thin gages, for use throughout industry, are now available from the industrial division of American Silver Co., Inc., 36-07 Prince St., Flushing 54, N. Y. The metals are now rolled to specifications in strips up to 8" wide and down to .0005" thick —to tolerances as close as plus or minus .0001". The strip is available in any quantity from one pound to thousands of pounds. The metals include temperature compensation, low expansion, high permeability, glass sealing, and electrical resistor alloys.

## Compact Electric Hoist For Bridge Cranes

New deck-type Cable King electric hoists for top mounting in double-girder bridge cranes are available from The Yale & Towne Manufacturing Co., Philadelphia 15, Pa. The units, available in capacities of from 1 to 15 tons, feature compactness of design; triple-reduction, spur-geared drive; totally-enclosed fan-cooled motor; rugged heavy steel suspension frame; and push button operated heavy-duty contractor. They are equipped with two brakes. The control station can be mounted in the crane cab or remotely located. Controls for operation of the trolley and bridge also are available.

## Stapling Plier Has Piercing Blade



The new Bostitch stapling plier, Model P-6-8P, with a piercing blade, is used for setting up and sealing corrugated containers. The blade is quickly and easily inserted through the fold of the container, making a small, thin slit. A squeeze of the handles drives and clinches a strong staple, forming a quick and secure fastening. The plier holds a strip of more than 80 staples, which are sturdy enough to fasten even tough corrugated board. The tool is small enough to be held and operated in the hand like an ordinary pair of pliers. Bostitch is at 1001 Mechanic St., Westerly, R. I.

## Small Power Press With Electronic Clutch

Famco Machine Co., Kenosha, Wis. says it is making small press history with its Model 59 Electromatic power press. It features a new instant-action electrically-operated, 9-point jaw which combines the simplicity of electric control and the high efficiency of jaw clutches. It is activated by a simple touch of the foot control, or optional hand controls. Famco says the simple

(*Please turn to page* 138)

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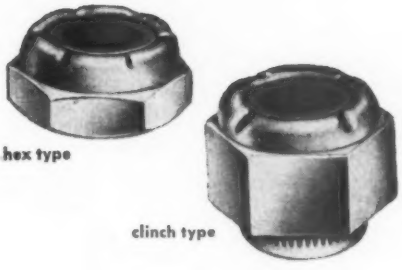


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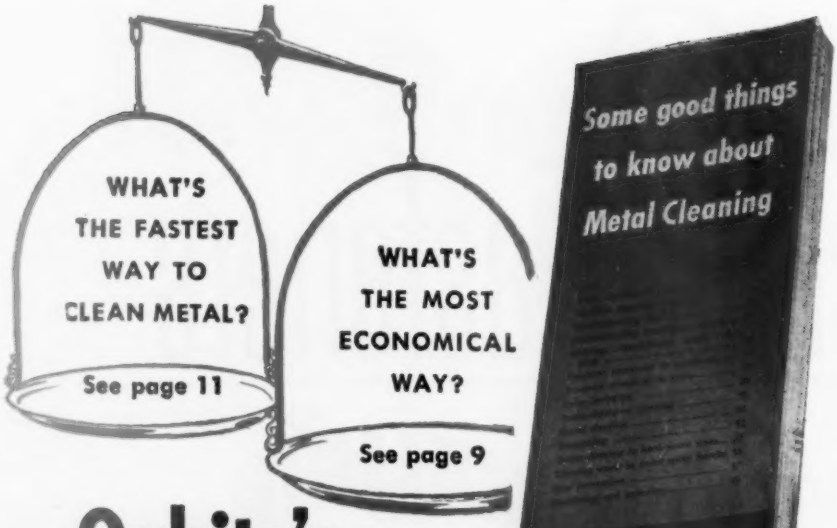
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See page 11
WHAT'S THE MOST ECONOMICAL WAY?
See page 9
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(*Continued from page* 136)

design means lower maintenance costs. A limit switch on the clutch housing provides absolute single stroke control. The convenient selector switch readies the press for either single stroke non-repeat, or continuous action, without stopping the press. An electronic timer converts the press into a fully automatic machine.

## Unit Applies Lane Marking Tape Quickly

Putting down lane marking tape on industrial and commercial floors does a lot to keep traffic running smoothly, but it's often annoying and time-consuming. Minnesota Mining & Mfg. Co. makes the job a lot easier with a new lightweight applicator that semi-automatically applies strips of "Scotch" brand plastic film tape No. 471 to mark trucking lanes, aisles, etc. Only one man is needed, and the tape is applied and rolled in a single step. The unit's pressure wheel smoothly puts the tape on all types of floor surfaces, including crevices and depressions. It handles tape in widths up to 4". 3M is at 900 Fauquier St., St. Paul 6, Minn.

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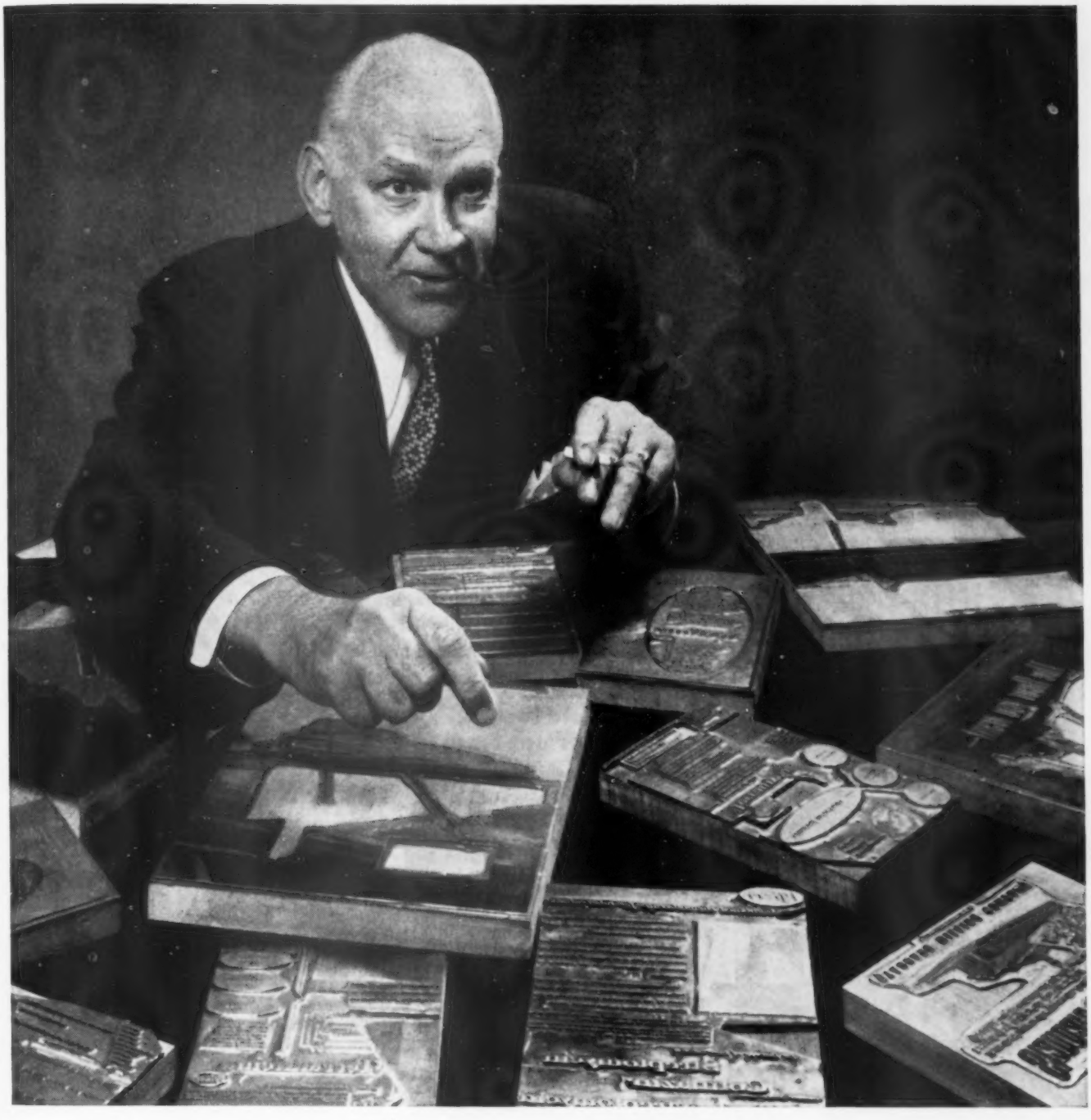

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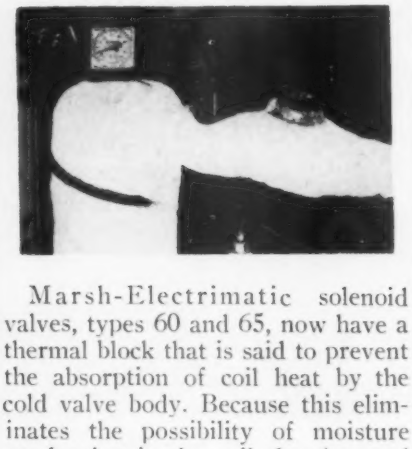
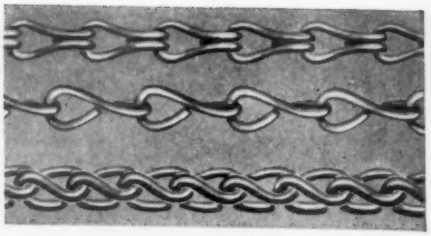
## Solenoid Valve With Thermal Block



Marsh-Electrimatic solenoid valves, types 60 and 65, now have a thermal block that is said to prevent the absorption of coil heat by the cold valve body. Because this eliminates the possibility of moisture condensing in the coil chamber and shorting out the coil, the valves are well suited for use on suction lines and cold water lines. Photograph shows an experimental arrangement of two valves mounted in the suction line of a freon 12 refrigeration system, one with the new thermal block, one without. Both early in the experiment and days later, when frost had been permitted to build up, it was shown that the thermal block was an effective means of keeping the coil housing and coil washer above the dew point, thus preventing possibility of the coil shorting due to condensation of moisture. The Electrimatic Co. is in Skokie, Ill.

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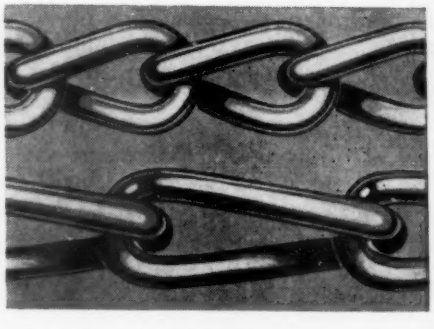
Cleveland 3, Ohio
Div. of The National Screw & Mfg. Co.



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REG. U.S. PAT. OFF.

More than 10,000,000 horsepower of G-E Tri-Clad motors are now serving American industry. This is ample evidence that Tri-Clad motors are industry's first choice for the hard jobs—jobs where uninterrupted production is a must.

Here, for example, are reports from four more industries where G-E Tri-Clad motors are providing superior performance—with minimum maintenance—regardless of today's increasing production demands.

## A MOTOR FOR EVERY NEED

In the Tri-Clad motor line, you have the widest selection of standard motors available today: ratings up to 2000 hp; all types of enclosures; gear motors, brake motors, and adjustable-speed drives—plus many other mechanical and electrical modifications to meet your requirements.

## ENGINEERING HELP AVAILABLE

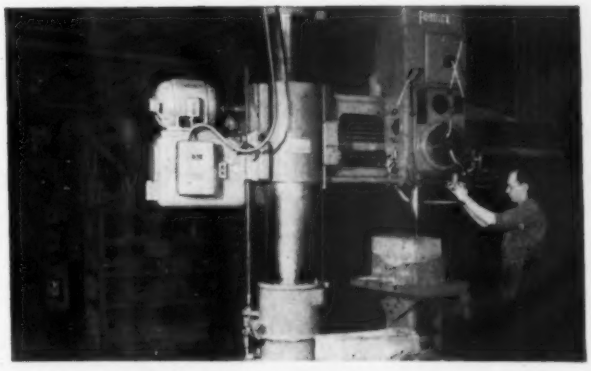
To get top performance from your machines, and to prevent costly shutdowns, G-E engineering specialists stand ready to help you plan your motor applications. And the most complete sales and service network in the motor industry assures you prompt attention to your motor problems.

## PROMPT DELIVERY

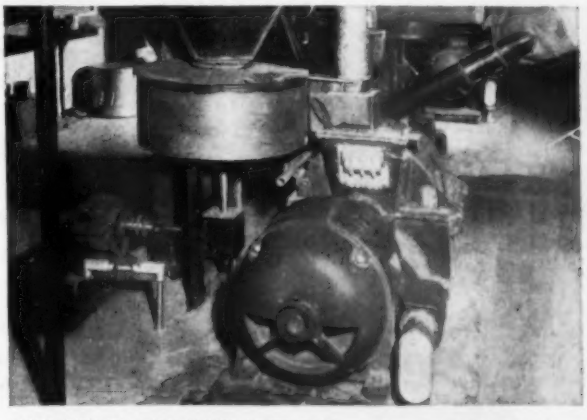
You can get standard G-E Tri-Clad motors right out of stock from G-E shipping points throughout the country. Contact your nearest G-E Sales Office or authorized G-E agent or distributor. *General Electric Co., Schenectady 5, N. Y.*

*Reg. trademark of General Electric Co.

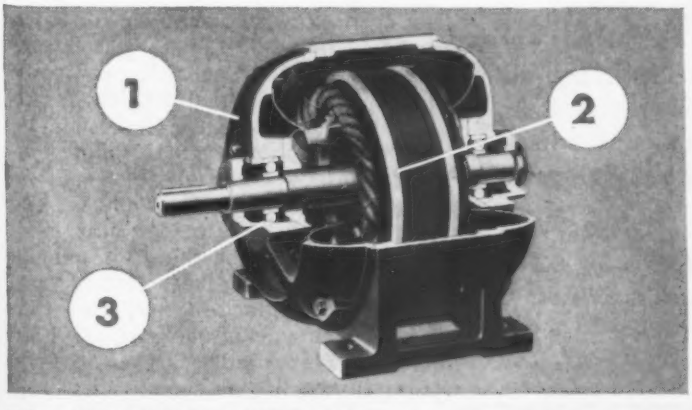
752-15



**BELL AIRCRAFT CO.** uses Tri-Clad motors throughout its plant. The Tri-Clad motor on this heavy radial drill has operated continuously for many years. Plant personnel can't remember a single interruption due to Tri-Clad motor failure!



**HERSHEY CHOCOLATE CO.** relies on Tri-Clad motors for hard jobs where shutdowns would be extremely costly. This Tri-Clad motor drives a cocoa mill—in continuous operation.




**YOU GET TRIPLE PROTECTION** with *every* Tri-Clad motor against .... 1 *physical damage*, with rigid corrosion and blow-resistant cast-iron frame; 2 *electrical breakdown*, with G-E Formex* wire which resists oil, heat, moisture, abrasion; 3 *wear and tear*, with *completely* enclosed bearings that last longer because they can be relubricated if necessary.

**AMERICAN CRYSTAL SUGAR CO.** reports complete satisfaction with G-E Tri-Clad motors on hard jobs. This Tri-Clad motor provides snappy starting ability needed by the compressor which supplies air to operating equipment throughout the plant, at Moorhead, Minn.

# The right start for GOOD GRINDING!

## Grinding Wheels

No matter what grinding machine you use—no matter what material you grind—it makes good sense and good grinding to select the wheels that conform to the needs of both.

Simonds Abrasive Company's complete line includes grinding wheels accurately specified for top results on all metals—on all grinding machines . . . on all grinding operations. It includes grinding wheels, mounted wheels and points, segments and abrasive grain.

*Write for free data book and name of your Simonds distributor.*

SIMONDS ABRASIVE CO., PHILADELPHIA 37, PA. BRANCH WAREHOUSES: CHICAGO, DETROIT, BOSTON
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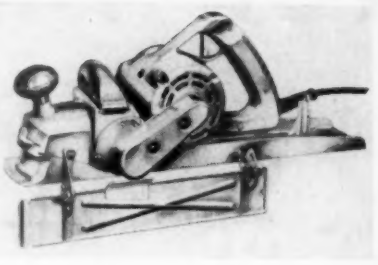
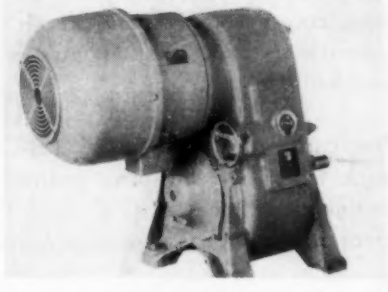
Division of Simonds Saw and Steel Co., Fitchburg, Mass. Other Simonds Companies: Simonds Steel Mills, Lockport, N. Y., Simonds Canada Saw Co., Ltd., Montreal, Que. and Simonds Canada Abrasive Co., Ltd., Arvida, Que.


## Electric Tool Planes Flat and Edge Surfaces



You can plane both flat surfaces and edges with equal efficiency with the new portable electric plane Model 190, says Skiltools, Inc., 5033 Elston Ave., Chicago 30, Ill. It has a full 3″ width of cut and a depth of cut capacity of ⅛″. A convenient lever controls the depth of cut with accurate gradations at each 1/64″. A chip deflector keeps work area free of chips and may be directed to right or left. The cutter head travels at the extra high speed of 13,500 rpm, producing a smooth, ripple-free surface that normally requires no sanding. Power is transmitted through a reinforced non-slip sprocket-type belt, eliminating stalling in even the hardest wood. Tool weighs 10½ lbs.

## Totally Enclosed Variable Speed Drives



Sterling Electric Motors' Speed-Trols, variable speed electric power drives, in the range of 20 to 25 hp with 2-1, 3-1, 4-1 speed variations, are now available in totally enclosed fan-cooled models. Illustrated model is a 25 hp, with 4-1 speed variation. A dual cooling system provides efficient internal and external cooling. Maximum cooling is accomplished because heat from every part of the motor is quickly transferred by triple action of connection, conduction and radiation to the outside of the motor. There any heat is rapidly carried off by a continuous flow of cooling air forced over the motor housing by the external fan and removable grilled fan cover. Sterling is at 5401 Anaheim-Telegraph Rd., Los Angeles 22, Calif.

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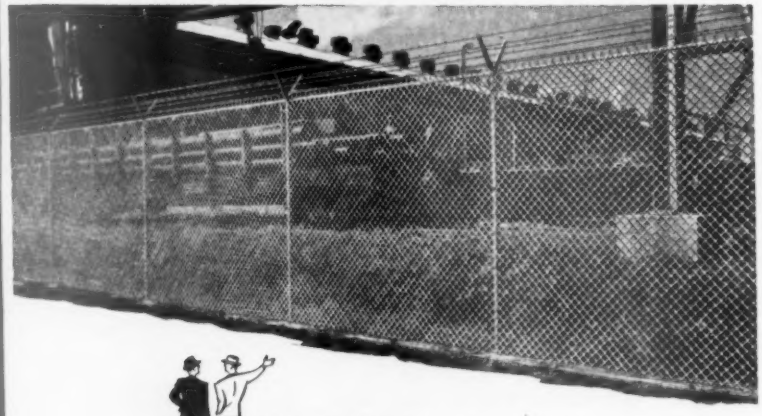

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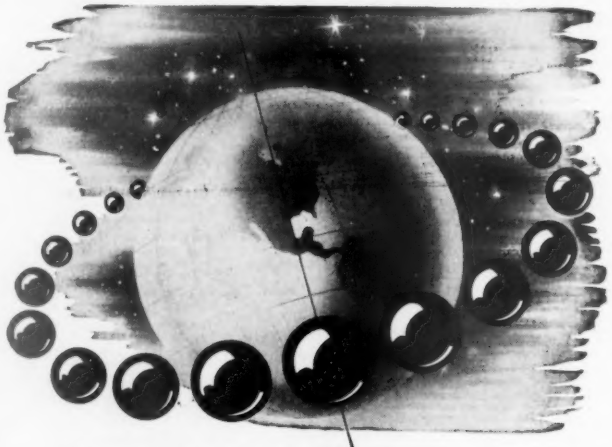

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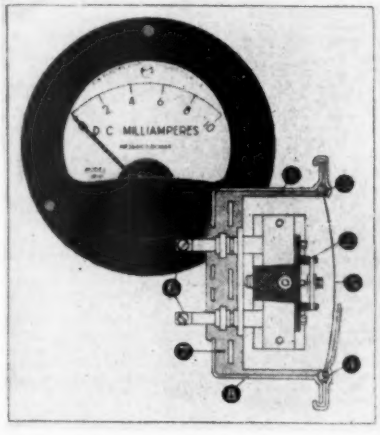
## Work Gloves Give Long Wear, Positive Grip

Positive gripping, long wearing qualities, and maximum pliability are listed as the features of Armor Grip work gloves made by Surety Rubber Co., Carrollton, O. They are made with closed, flexible metal zippers permanently bonded to fingers and palms in synthetic rubber. The company's gloves, mittens and palm guards are said to provide a multiple safety factor against impact, cutting and abrasive wear. The gloves are made in all sizes and styles for all types of jobs.

## "Ruggedized" Meters For Military Applications




"Ruggedized" meters, built to withstand usage, shock, extremes of temperature and pressure, etc. are being made to meet Military Specification Mil-M-10304 by Sun Electric Corp., 6323 Avondale Ave., Chicago 31, Ill. Sun lists these as among their features: meter movement shock mounted and housed in rubber-lined case; observation window rubber grommeted and sealed to rubber lining of case, providing hermetical seal of high dielectric materials; meter movement supported by die-cast frame for greater strength and accuracy; non-rigid

(*Please turn to page* 150)

# Save time and labor ...increase output

## WITH AB-I CIRCUIT BREAKERS

Westinghouse AB-I Circuit Breakers reduce down time after a circuit fault . . . because they can be "Reset" in seconds after the fault is cleared. As a result, you save time and labor; production keeps rolling.

In vivid contrast, other types of circuit protective devices require element replacements. This takes valuable time for which you pay.

Unnecessary service interruptions are out, too, with AB-I Breakers. Inverse time-delay trip mechanism carries harmless, peak overloads without interrupting the circuit. Yet, on shorts or dangerous overloads all poles open instantly. Tamper-proof calibration stays exact.

Self-indicating AB-I Breaker handle mechanism shows breaker setting without opening cover. Handle mechanism meshes with breaker handle regardless of breaker setting, prevents damage if cover is slammed shut. Handle may be padlocked to prevent tampering, but on a fault, breaker is trip-free. It cannot be held or locked "On".

For facts, call your Westinghouse Representative or write for B-5456, Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-30091

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THE COMPLETE LINE

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"Of course, circuit breakers save money"

Water- and Dust-Tight | Explosion-Proof | Oil-Immersed—Explosion-Proof

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has *looks* for store and office
*stamina* for shop and factory

The "740" carries everything from stationery and supplies to tools and dies. Its *large capacity* saves countless steps and time. Its *compact design* is made for narrow aisles and limited space.

The "740" Features

- detachable handle—use it either end
- two trays with deep sides for safe handling—16" x 30" or 24" x 36"
- legs with unique double-angle construction—for extra strength without extra weight
- ball bearing caster races—making steering easy
- sturdy, free-rolling casters—making pushing easy

*Write for literature*

STANDARD PRESSED STEEL CO.
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Shipped Knocked Down—IT'S EASY TO ASSEMBLE

A sturdy fiber container makes sure it arrives in good condition. Only 11 parts to fasten together. Just use a small socket or open end wrench. All necessary fasteners are included in the package. A few minutes' work and your "740" is ready to make life easier.

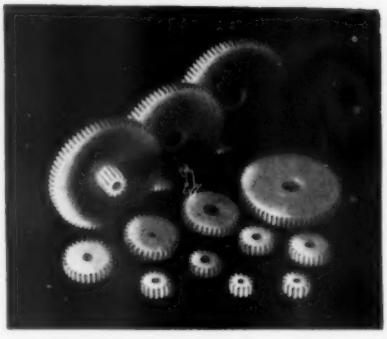
HALLOWELL MATERIALS HANDLING DIVISION

SPS
JENKINTOWN PENNSYLVANIA

(*Continued from page* 148)

mounting of observation window with rubber grommet increases resistance to shock. The meters are available as d-c voltmeters, ammeters, milliammeters, and microammeters, and also may be ordered as rectifier type a-c instruments.

## Molded Nylon Gears Carried In Stock



Molded nylon gears are now immediately available from the Nylomatic Division of John A. English & Company, Morrisville, Pa. The gears are said to give quieter operation, wear better, and allow greater tolerances in center locations. The company states they cost about half as much as their counterparts in metal. Carried in stock are spur gears in 48 diametral pitch, 14½ degree pressure angle, ranging from 12 to 80 teeth. Available on special order from stock molds is a large selection of unit-molded 48 pitch gear and pinion combinations for use in speed reducer applications. Similar lines in 64, 32 and 24 diametral pitch gears will be offered in the near future.

## Better Heat, Shock Resistance in Plastic

Koppers Company, Inc., Pittsburgh 19, Pa., says its new MC 409 meets the demand for a polystyrene with improved shock resistance as well as excellent heat resistance. The modified polystyrene has shown ASTM heat distortion temperature values as high as 198F. At the same time elongation in tension is 5 to 6 times that of regular polystyrene. Among the definite applications in industrial operations for the new plastic, Koppers lists automatic dishwashers, cutlery handles; refrigeration parts that have to be hand washed; auto battery cases where engine temperatures require material with superior heat and shock resistance. It is available in all the opaque colors, but not in transparent colors.

# SANDVIK SPECIALIZED SPRING STEELS . . .

*Do your requirements often call for consistent, repeated precision in spring steel?*

In SANDVIK spring steels, accurate gauge is uniformly maintained both along and across the strip. This gauge uniformity assures continuous production precision from coil to coil.

SANDVIK high carbon and alloyed strip steels are supplied:

- **In special analyses for specific applications**
- **Annealed, unannealed or hardened and tempered**
- **Precision-rolled in thicknesses from .001"**
- **With bright finish or polished bright, yellow or blue**
- **With round edges or square edges**
- **In a wide range of widths**

*Phone or write for further information.*

**SANDVIK STEEL, INC.**
**111 EIGHTH AVE., NEW YORK 11, N. Y.**
**WAtkins 9-7180**
230 N. Michigan Ave., Chicago 1, Ill., FRanklin 2-5638
1736 Columbus Rd., Cleveland 13, Ohio, CHerry 1-2303
WAREHOUSES: New York and Cleveland
SANDVIK CANADIAN LTD., P.O. Box 40, Station O, Montreal 9, P. Q.

**give you**
**Continuous Precision**

SS-39

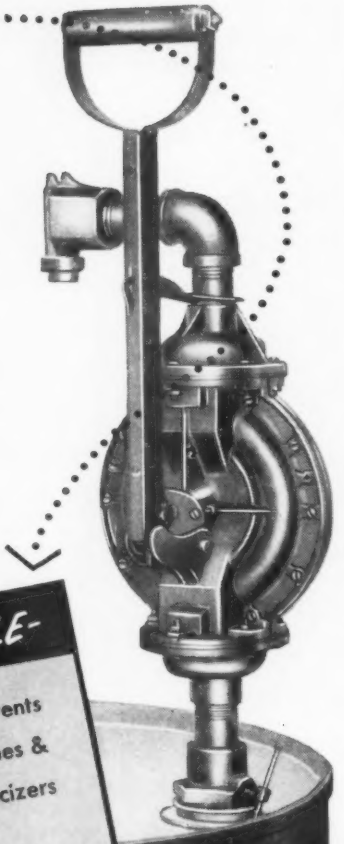
Sandvik Quality Steels

SOME SANDVIK SPECIALTY SPRING STEELS – Band Saw Steels; Metal Band, Wood Band and Butcher Band · Camera Shutter Steel · Clock and Watch Spring Steels Watch Parts Steels · Compressor Valve Steel · Doctor Blade Steel · Feeler Gauge Steel · Flapper Valve Steel · Knife Steels · Razor Blade Steel · Reed Steel · Shock Absorber Steel · Sinker Steel · Spring Steels · Tape and Rule Steel · Textile Steels Trowel Steel · Vibrator Reed Steel

A superior transfer pump

# for HARD-to-HANDLE LIQUIDS

Do you have a liquid handling problem that a good hand pump could solve? This Tokheim DOUBLE ACTION barrel pump with optional diaphragm and body may be the answer. FAST—it will deliver 20 gallons per minute of most liquids. HIGH VACUUM—it will lift gasoline 20 feet. ADAPTABLE—it will handle a wide range of liquids, and is supplied with hose or spout outlets for drums, skid tanks or underground installations. Compare the list below with your present needs; then call your dealer, your Tokheim representative, or write the factory for literature.



A TOKHEIM WILL HANDLE-

Acetates Alcohols Aromatic Solvents
Chlorinated Solvents Glycols Ketones &
Ethers Petroleum Solvents Plasticizers
Petroleum Products

also miscellaneous liquids such as:

Ammonia Anti-Freezes Castor Oil Caustic
Soda Solution China Wood Oil Creosote
Freon Glycerine Linseed Oil Liquid Soap
Pine Oil Pine Tar Oil Soy Bean Oil
Styrene Tung Oil Turpentine Water

TELL US YOUR PROBLEM

LISTED UNDER REEXAMINATION SERVICE UL UNDERWRITERS' LABORATORIES, INC.

QUALITY TOKHEIM DOUBLE-ACTION HAND PUMPS

General Products Division
TOKHEIM OIL TANK AND PUMP COMPANY
DESIGNERS AND BUILDERS OF SUPERIOR EQUIPMENT SINCE 1901
1678 WABASH AVENUE FORT WAYNE 1, INDIANA
Factory Branch: 1309 Howard Street, San Francisco 3, California

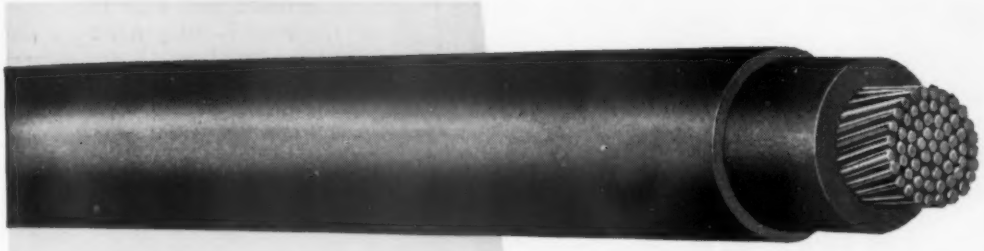

## Materials Handling Basket of Steel Mesh

A steel mesh basket-shaped like its well-known NesTier materials handling box—has been brought out by the Chas. Wm. Doepke Mfg. Co., Inc., Rossmoyne, O. The basket is meant for handling and space saving during operations where small parts are being moved and dipped in chemicals, paints, and other liquids. The rust-proof and corrosion resistant basket can be nested when not in use and tiered when filled with parts. Folding handles are at ends of the basket. Grooves on the bottom self center for greater stack rigidity. Even when moved on a monorail conveyor system the basket always remains level. Nested, the basket requires about 1/6 the space necessary when tiered.

## Hoist Is Flexible, Easy to Service

Coffing Hoist Company's new Model R coil-chain ratchet-lever hoist is said to provide great flexibility in use, and very easily serviced. Use of coil instead of roller chain permits the chain to swing or wrap easily in any direction. When not under load, it may be pulled freely through the hoist for quick adjustment. Coffing's ratchet and pawl operating principle eliminates the need for a friction brake,

(*Please turn to page* 156)

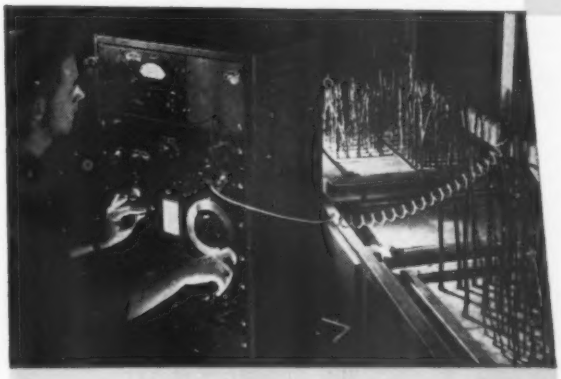


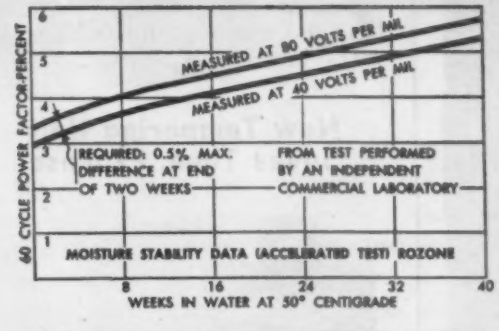
500,000 CM stranded single conductor RoZone insulated, RoPrene sheathed power cable . . . 5000 volts.

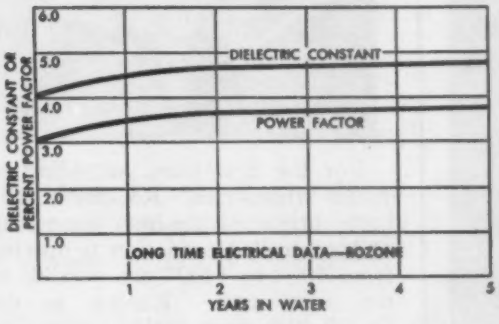
# Rome RoZone®

## Superior Ozone-Resistant Insulation Deserves Your CONFIDENCE

As indication of their behavior in service and conformity to specification, insulated cable specimens are measured electrically for moisture absorption after long-time immersion in temperature controlled water baths.




60 CYCLE POWER FACTOR-PERCENT
MEASURED AT 80 VOLTS PER MIL
MEASURED AT 40 VOLTS PER MIL
REQUIRED: 0.5% MAX. DIFFERENCE AT END OF TWO WEEKS
FROM TEST PERFORMED BY AN INDEPENDENT COMMERCIAL LABORATORY
MOISTURE STABILITY DATA (ACCELERATED TEST) ROZONE
WEEKS IN WATER AT 50° CENTIGRADE




### What Its Exceptional Moisture Resistance Means To You

**Q: What effects can moisture have on cable insulation?**

**A:** The presence of moisture absorbed in cable insulation alters its electrical character and, depending on the type of insulation, may effect those characteristics most important for service . . . causing failure.

**Q: Can the effects of moisture be predetermined?**

**A:** Yes . . . by long-time electrical measurements or by recently developed electrical stability tests. Since it is not only a question of "how much" moisture is present but, even more important, its location or distribution within the insulation, an electrical test is considered to be the only truthful yardstick of performance.

**Q: Does RoZone resist moisture satisfactorily?**

**A:** Yes. Experience and long-time test data have proved RoZone has exceptional *electrical stability in the* presence of water and its performance is not impaired by exposure to water.

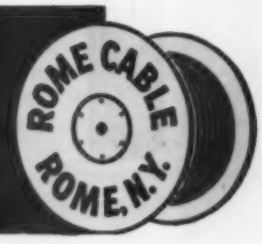
**Q: Where could cable insulation become appreciably exposed to water during service?**

**A:** In submarine service, buried directly in the earth, or in wet ducts or conduit. Water is present almost everywhere and may condense in raceways or on cables suspended in air. RoZone is recommended for any of these applications.

***It Costs Less to Buy the Best***

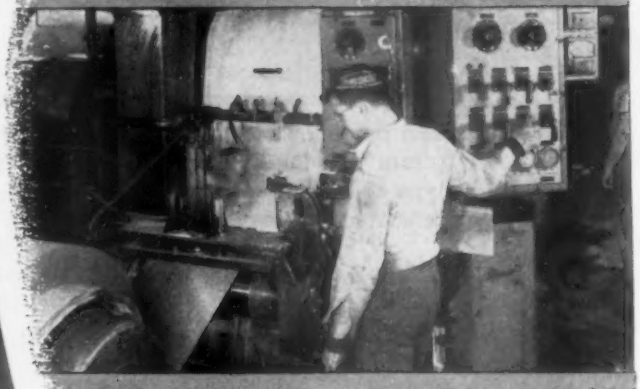
*RoZone is approved and accepted by leading utilities, industrials and consulting engineers.*

**ROME CABLE**
*Corporation*
ROME • NEW YORK
*and*
TORRANCE • CALIFORNIA



LOW CARBON • HIGH CARBON • ALLOY • STAINLESS • STRIP AND TUBING

UNIFORM
HIGH QUALITY
*Demands*
MODERN
EQUIPMENT



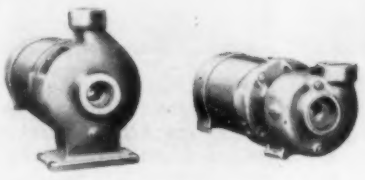
Production of steel strip and tubing to meet modern industry's rigid specifications demands the most modern equipment. During the last 30 years, The Wallingford Steel Co. has kept pace with developments in both machinery and techniques by sponsoring a continuous program of replacement and improvement. Today, not one piece of original equipment is still in use. The two-stand, four-high tandem rolling mill shown above is an outstanding example of the many precision built production machines in our completely equipped plant. Electrolimit continuous mill gages provide a constant check in holding strip to extremely close tolerance.

THE
WALLINGFORD
SINCE 1922
STEEL
CO.
WALLINGFORD, CONNECTICUT, U.S.A.

(*Continued from page* 152)

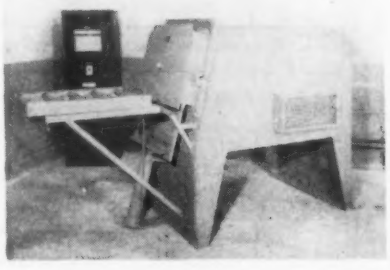
since the load is suspended on the ratchet and pawl at all times and cannot slip. The hoist has but few parts and can be completely disassembled in seconds with only a screwdriver. It is available in 1,500 and 3,000 lb. capacities. Coffing is at 800 Walter St., Danville, Ill.

## New Line of Packaged Close-Coupled Pumps



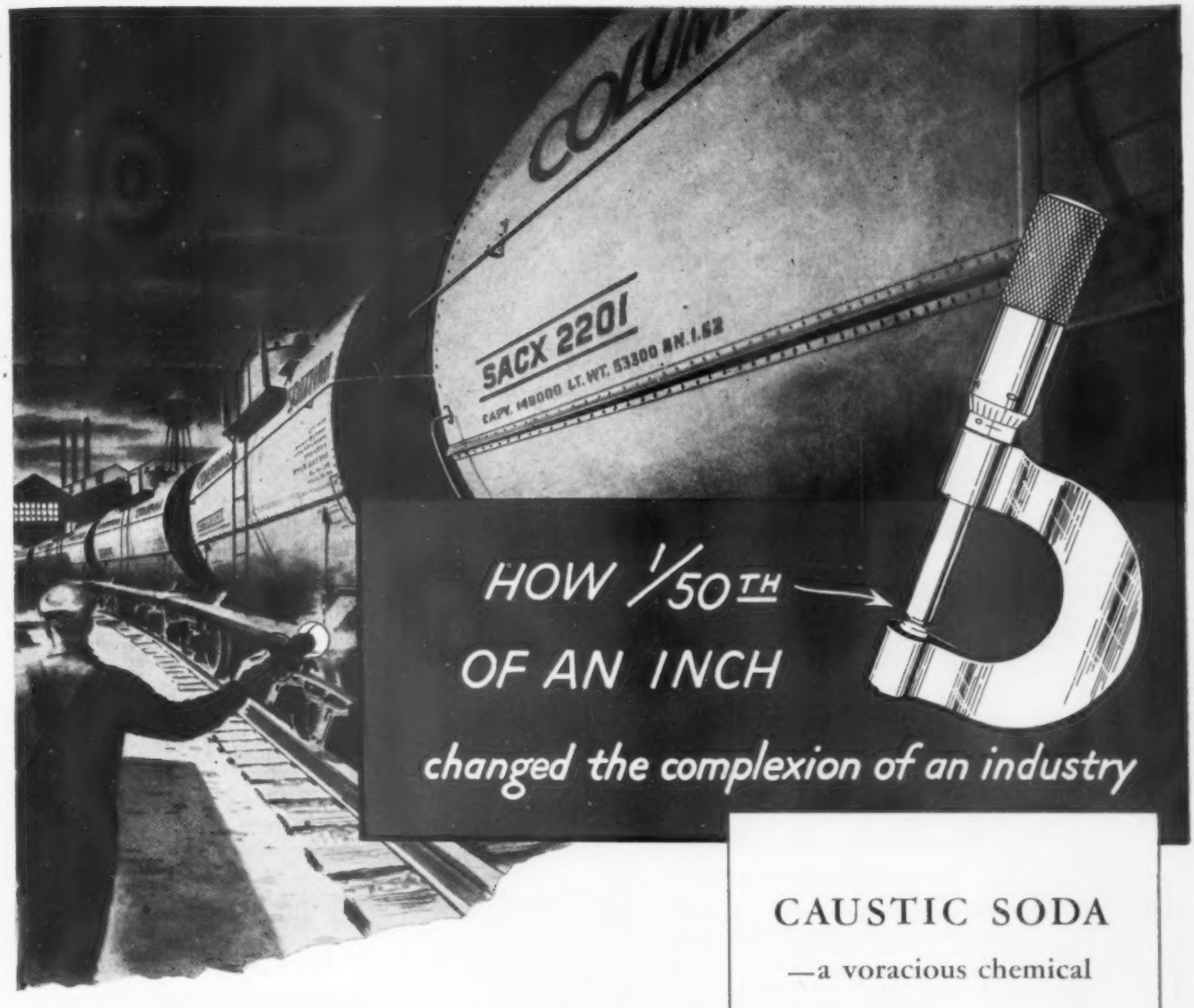
A packaged line of close-coupled pumps of types SAC and JMC, covering a capacity range from 5 to 150 gpm and heads from O to 110 feet, at speeds of 3500 rpm, has been brought out by Aurora Pump Co., 12 Loucks St., Aurora, Ill. Packaging assures off-the-shelf delivery. The line includes 29 combinations in ¾", 1¼" 1½", and 2" sizes, with either 3-phase or single-phase motors. Pump and motor are supported on feet cast integral with pump. Suction is located on the end, and discharge is vertical. The pumps are also packaged as pump, base and coupling units with which users' motors can be used.

## New Tempering Unit Saves Time, Expense



For the first time, according to Ipsen Industries, Rockford, Ill., both bright, scale-free tempering and controlled oxidation tempering from 400° to 1400° are possible in the same unit. Known as the D-300, this new sealed, controlled atmosphere uses a completely new process of controlled oxidation. By providing scale-free heat treating, considerable time and expense can be saved with bright or controlled oxidation tempering, eliminating cleaning operations. The D-300 also produces a controlled oxide coating,

(*Please turn to page* 158)




# HOW 1/50TH OF AN INCH changed the complexion of an industry

A lining for tank cars which is only 1/50th of an inch thick—scarcely more than a film—first made practicable the shipment of liquid caustic soda in high concentrations without metallic contamination. As numerous processes necessitate the use of caustic in its purest form, this Columbia-Southern development has enabled many companies to effect economies in their use of this essential raw material.

In spite of its thinness, this patented lining effectively seals the caustic from the steel of the tank car, and its purity—even at highest concentrations—is safeguarded throughout transit.

This is one of a number of notable contributions to industry which have made Columbia-Southern one of the nation's great producers of alkalies and related chemicals.

## CAUSTIC SODA

### —a voracious chemical

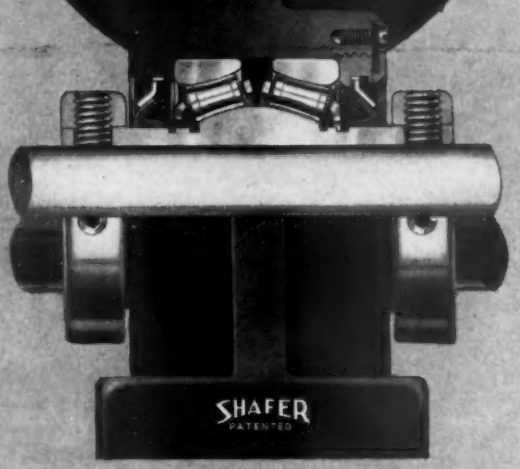
**The usefulness of caustic soda to industry is based upon this very power to attack and break down the chemical structure of many materials. In the manufacture of rayon, for example, caustic soda digests and purifies the cellulose . . . in the making of soap, it decomposes fats. This chemical activity of caustic soda makes it a vital raw material in a wide variety of industrial applications, and especially in the manufacture of other chemicals.**

COLUMBIA-SOUTHERN
CHEMICAL CORPORATION
SUBSIDIARY OF PITTSBURGH PLATE GLASS COMPANY

**SODA ASH • CAUSTIC SODA • LIQUID CHLORINE • SODIUM BICARBONATE • CALCIUM CHLORIDE • MODIFIED SODAS CAUSTIC POTASH • RUBBER PIGMENTS (Hi-Sil, Silene EF, Calcene TM, Calcene NC) • CHLORINATED BENZENES MURIATIC ACID • PERCHLORETHYLENE**

**EXECUTIVE OFFICES:** FIFTH AT BELLEFIELD, PITTSBURGH 13, PA. **DISTRICT OFFICES:** BOSTON • CHARLOTTE • CHICAGO • CINCINNATI • CLEVELAND DALLAS • HOUSTON • MINNEAPOLIS • NEW ORLEANS • NEW YORK • PHILADELPHIA • PITTSBURGH • ST. LOUIS • SAN FRANCISCO

THE *Rugged* JOBS ARE "*Routine*" FOR SHAFER BEARINGS




Throughout the land Shafer Roller Bearings are increasing the nation's productive capacity—carrying big loads, saving money and power, reducing down time and maintenance costs wherever America's heaviest duty power transmission equipment is at work.

Shafer Bearings handle these tough jobs better because they are engineered to-the-job—to provide *longer* life, *greater* dependability and *lower* operating costs under the severest working conditions. Integrally self-aligned, they have full radial-thrust and greater reserve shock load capacities under all conditions of misalignment; are equipped with self-centering "Z" housing seals and Micro-Lock 12-point adjustment. See the Shafer bearing specialist near you . . . or write us direct . . . for complete information and engineering consul on a no-obligation basis. SHAFER BEARING CORPORATION, 801 Burlington Avenue, Downers Grove, Illinois.

SHAFER BEARING CORPORATION
801 BURLINGTON AVENUE
Downers Grove, Ill.

Take-Up Units

Pillow Blocks

Unmounted Bearings

Flange Units

Flange Cartridge Units

Take-Up and Frame Units

Cartridge Units

Aircraft Control Bearings

SHAFER
SELF-ALIGNING
ROLLER BEARINGS
INDUSTRIAL • AIRCRAFT

Duplex Units

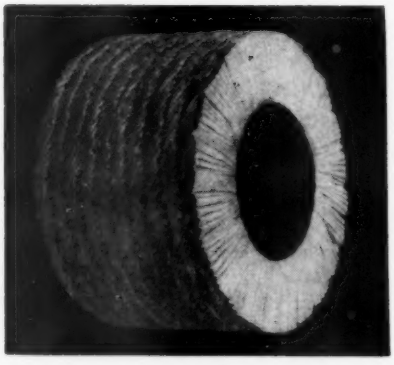
(*Continued from page* 156)

which is often desired to reduce corrosion or wear, and to produce an attractive blue-gray or blue-black appearance.

## Magnetic Holder For Small Dial Indicators

This magnetic base holder, with magnifier, will hold most small dial indicators to curved or flat surfaces, eliminating cumbersome and haphazard clampings. It has a magnetic pull of approximately 50 lbs. The magnifier can be set at any angle or position. Accessories include one 7/32" and one 5/16" diameter post, a 4½" extension rod, and an adaptor to take the magnifier as well as 5/32" stud type indicators. These accessories permit using Starrett No. 196, Lastword, Federal, Ideal, and other test indicators. The unit is made by Enco Manufacturing Co., 4524 W. Fullerton Ave., Chicago 39, Ill.

## New Buffing Wheel



A new type of finger buff called the P-30 is said to be equally useful for hand buffing and machine operation. Each buff finger is constructed by folding the cloth in pleats. This construction traps and holds the cutting compounds for all kinds of polishing and buffing. Each pleated buff finger is set at the proper angle on the wheel to prevent gouging or streaking of the work. The wheel is made in all types of cloth and in all sizes from 6" to 18" diameter by Geo. R. Churchill Co., 7524 Fayette St., North Quincy 71, Mass.

# One order

## saves time . . . simplifies procedures

Every time you receive a requisition for an electrical drive you are confronted with purchasing two main components—a motor and its control. The two work together as a team. In fact, the control characteristics must dovetail with the characteristics of the motor. It's only logical that a manufacturer that builds both motors and controls can co-ordinate their design and manufacture down to the smallest detail.

By specifying Westinghouse matched motors and controls, you insure your investment. They are paired for performance. You also profit by the undivided responsibility offered. This means one source for deliveries . . . one source for servicing and repair parts.

*Plus,* you can place one order for *both* motors and control. This cuts in half the work of ordering. Procedures are simplified every step of the way.

What's more, you receive the latest, most advanced design of equipment. Take the Life-Line motor and Life-Linestarter, for example. Each is the result of never-ending motor and control research and manufacture. Each incorporates exclusive features unobtainable on other equipment.

Why not simplify procedures . . . benefit from undivided responsibility . . . insure production schedules by ordering matched Westinghouse motors and controls. A check with your nearby Westinghouse representative will bring you full information. Call him today. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-21660

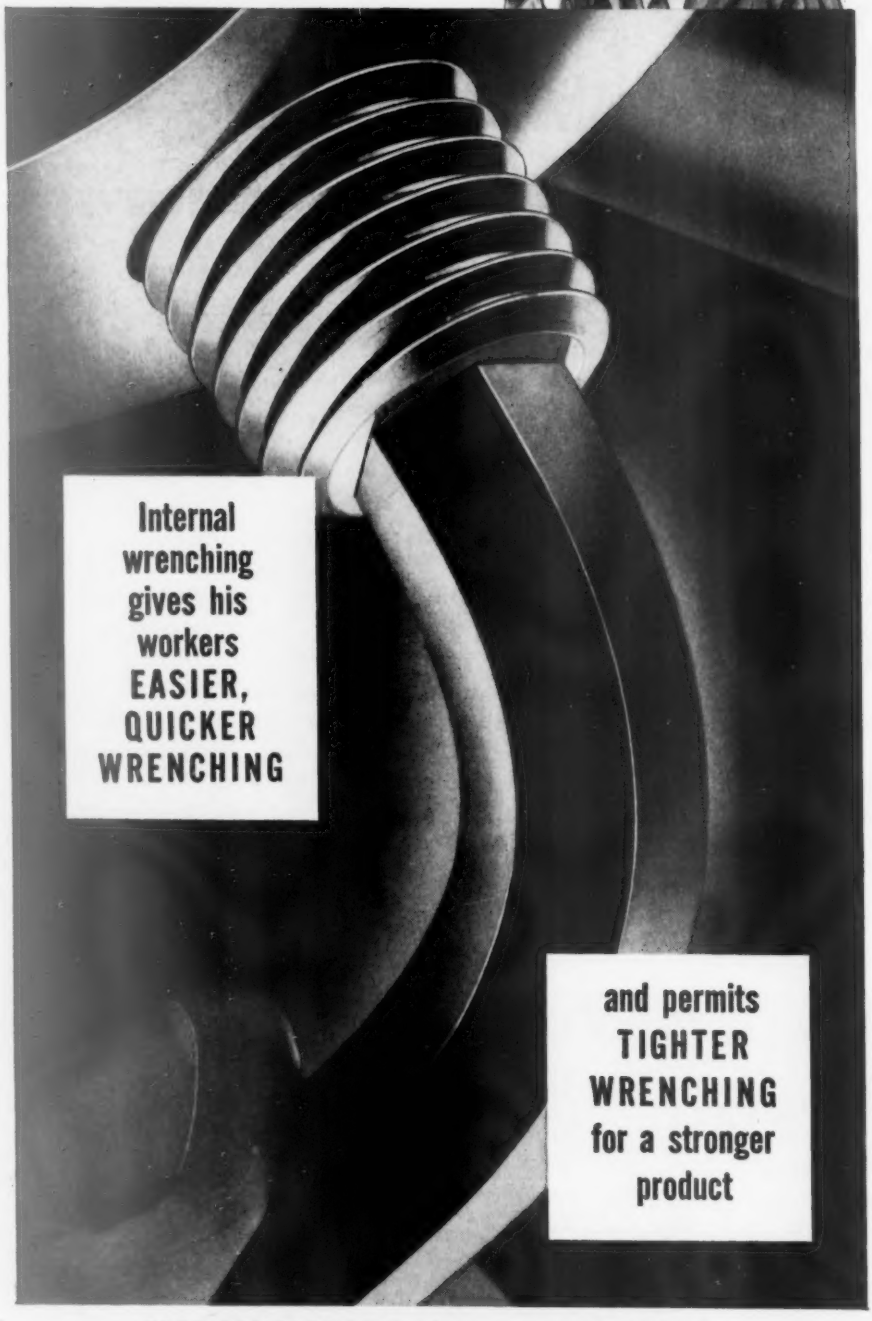
YOU CAN BE SURE... IF IT'S

**Westinghouse**

*Life-Line*

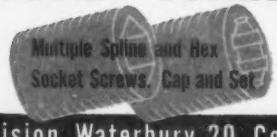
MOTORS and CONTROLS

# Faster Assembly is easy for this Plant Engineer



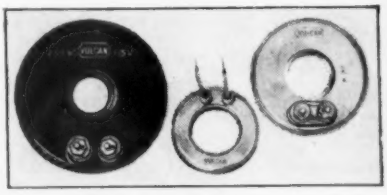

FREE SAMPLES and socket screw catalog. Write us.

BRISTOL'S SOCKET SCREWS




THE BRISTOL COMPANY, Socket Screw Division, Waterbury 20, Conn.


## Easily Installed Electric Ring Heaters



Concentrated heat and ease of installation are called the features of a new line of electric ring heaters announced by Vulcan Electric Co., Danvers, Mass. They can be used for both space and contact units for assembly into a wide variety of equipment. The six standard sizes run from 2" outside diameter, ¼" thick, to 6" diameter, 5/16" thick. One type, in rust-resisting steel sheath is for temperatures up to 750F. The other, in stainless steel sheath is for temperatures up to 1200F. Steel sheath wattage runs from 75 to 800. Stainless steel, from 100 to 1000. Both are supplied in either 115 or 230 volts, or in special voltages, as required.

## Pressurized V-L Fire Extinguisher

Fyr-Fyter Company's newest extinguisher is a vaporized liquid unit known as Pressurized Model B, featuring fast, one-hand operation with accurate control. The operator sends a direct on-target stream up to 30 feet merely by squeezing the grip. To simplify inspection, cleaning, and recharging, the entire valve assembly and pick-up tube unscrew as a unit from the shell. A visual gage constantly shows pressure condition. The extinguisher, which comes in one and two-quart sizes, is approved by Underwriters' Laboratories, and can be used on burning liquids, live electrical fires, and small general fires. Fyr-Fyter is at 221 Crane St., Dayton, O.

# SuVeneer® CLAD METALS

Prospecting for more profitable product fabrication? You're in luck when you find how **SuVeneer** Clad Metals pan-out on your applications . . . in savings of expensive non-ferrous materials, in ease of fabrication, and in improved product performance. **SuVeneer** Clad Metals are composites of genuine copper, or brass, or nickel, bonded inseparably to plain strip steel on one or both sides. ● You save from 70% to 80% of the solid strategic metals, while enjoying *all* their surface advantages. Write!

**Superior Steel**
CORPORATION
CARNEGIE, PENNSYLVANIA

LIKE AN
ATOM-IC
EXPLOSION

Just 1/32" (pinhole size) faucet leak
MUSHROOMS into ATOMIC WASTE
of approximately 95,000 gallons *
of water yearly—costing:
$24.14
@ $1.90 per M cubic feet

If a hot water faucet, then (actual) FUEL WASTED heating 95,000 gallons costs approximately:
$88.91 if coal (9879 lbs.) †
$91.08 if oil (792 gals.) †
$84.41 if gas (84,411 cu. ft.) †
Above figures authenticated by Hackensack Water Co.* and American Gas Association. †

STOP this needless WASTE during today's MATERIAL and MANPOWER shortages with 'SEXAUER' "Easy-Tites" that outwear ordinary faucet washers 6-to-1, thus SAVING labor on 5 REPEAT repairs, PLUS water and fuel, while prolonging the life of SCARCE fixtures.

PAT'D.
"EASY-TITE"
FAUCET WASHERS

...a modern laboratory triumph, are compounded from du PONT NEOPRENE (tested up to 300°F.) instead of rubber—to withstand DESTRUCTIVE HEAT common in present-day superheating water systems—that formerly broke down washer's structure.

*Built like a tire with fabric re-inforcement* they resist the grinding, closing squeeze that SPLIT and MUSH ordinary washers out of shape...causing LEAKS.

Through combining NEOPRENE and FABRIC RE-INFORCEMENT they OUTWEAR ordinary washers 6-to-1 on hot or cold FAUCETS—thus you slash water, fuel and labor costs.

THE NEW 'SEXAUER' CATALOG

Edition G, just out, pictures over 2500 TRIPLE-WEAR plumbing REPAIR parts and Pat'd. Precision Tools. It's today's accepted buying guide for discriminating purchasing and maintenance personnel among thousands of top PLANTS, INSTITUTIONS and GOVT. AGENCIES that rely on SEXAUER repair materials. *Send for your copy today!*

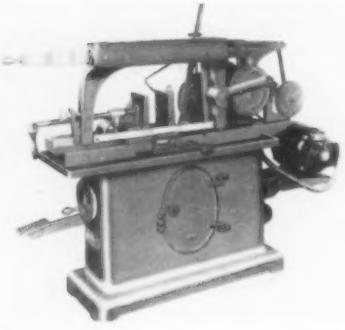
Then too, there's a SEXAUER TECHNICIAN within quick call from coast-to-coast, who offers a special SURVEY service that sets up a schedule of the exact replacement parts required for your particular plumbing fixture regardless of make or age and *without obligation.*

*A postcard will bring him and your NEW Catalog promptly.*

J. A. SEXAUER MFG. CO., INC. Dept. AP 112
2503-05 Third Avenue, New York 51.
*as advertised in* THE SATURDAY EVENING POST

SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

## Power Hack Saw



Latest Keller power hack saw announced by Sales Service Machine Tool Co., 2363 University Ave., St. Paul, Minn., is a large model with capacity for a 9¼" round or an 8" x 9" flat. The new saw has a cabinet base, automatic lift on the reverse stroke and a foot lever to help hold the frame in position while loading or unloading or setting the saw for desired material length. Variable power pressure regulator to the blade by easy operating control wheel at front of saw provides pressure from 0 to 200 lbs. This is said to enable the saw to cut any material from lightest wall tubing to heavy shafting with great speed and accuracy. The saw is equipped with swivel base vise with quick adjustable sliding jaws and single screw.

## Also Noted . . .

Chlorophyll-impregnated felt, for use where control or minimizing of odors is important, is available from The Felters Company, 210 South St., Boston 11, Mass. It imparts a clean smell, is non-staining and non-toxic. Requests for samples should be accompanied by description of proposed use.

A new universal tube bender of The Imperial Brass Mfg. Co., 1200 W. Harrison St., Chicago, Ill., will blend any type of tubing including hard drawn copper and hard temper steel. Of the gear type, the bender is exceptionally compact. It can be used to make right or left hand bends, return bends, offset bends and right angle bends.

Andal Typad is a foam-fabric pad which absorbs the vibration and reduces the operating noise of office machines. Not only efficient, but also attractive, it is made of a wear-resistant decorator-type fabric.

(*Please turn to page* 168)

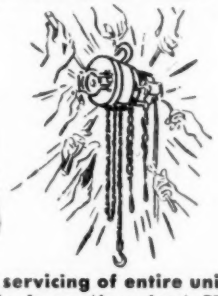
four points
in your favor
WHEN YOU STANDARDIZE
ON COFFING HOISTS

1

**Coffing helps you choose the right hoist.** Qualified engineers are always ready to study your problem, then recommend the right unit from the complete Coffing portable line.

2

**Built for longer use.** Only the finest drop-forged steel hooks and other high-quality materials are used throughout. All hoists are tested at 100 percent overload to assure safety and long life.

3


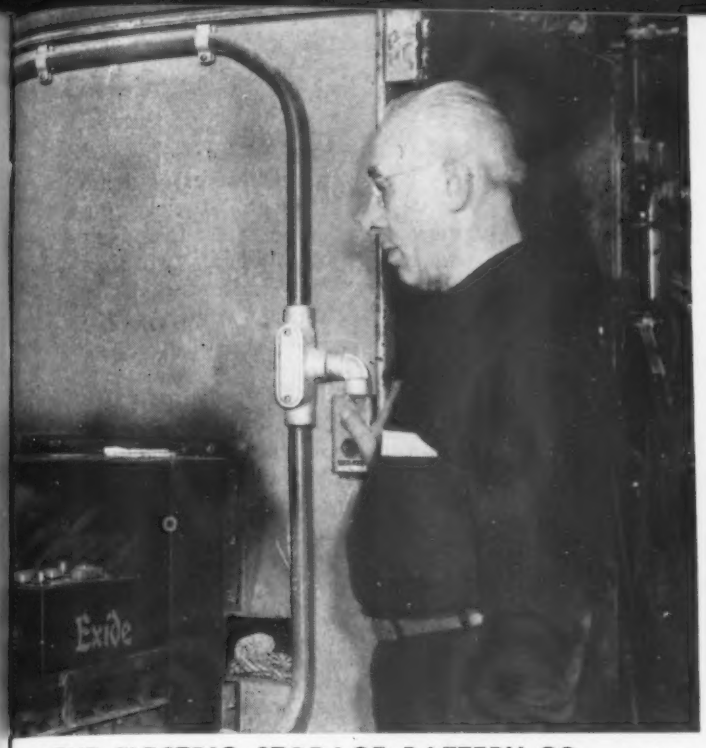
**Prompt servicing of entire units** by men who know them best. Hoists are promptly and expertly serviced at the Coffing factory, thoroughly checked and tested... then rushed back to active duty.

4

**Parts shipped "right now."** If you handle your own repairs, immediate shipment of replacement parts eliminates the need to carry large stocks of spares.

Ask for full information on the Coffing Hoist Line. Write Dept. Z11.

COFFING HOIST COMPANY
Danville, Illinois
Quik-Lift Electric Hoists • Hoist-Alls
Safety-Pull Ratchet Lever Hoists
Mighty Midget Pullers • Spur-Geared Hoists
Differential Chain Hoists • Load Binders
I-Beam Trolleys

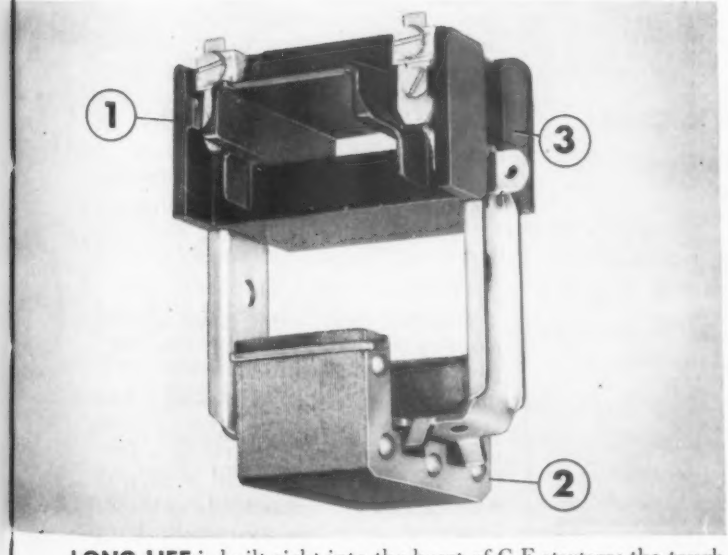


▲ **THE ELECTRIC STORAGE BATTERY CO.** of Philadelphia, Pa. makers of Exide Batteries, chose General Electric magnetic starters to protect production flow. They report no shutdowns due to starter failure. Above, two G-E fusible combination starters are used in key section of an Exide production line.

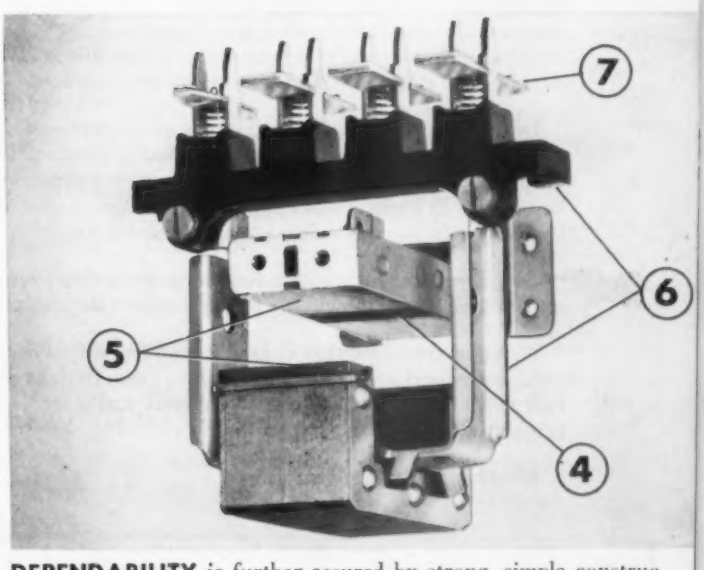
**ELECTRO-LIFT, INC.** of Bloomfield, N. J. makes motorized hoists which are subject to continual start-stop operation. They use G-E magnetic starters to assure unfailing operation to their customers, and to speed their own production. Ample wiring room and large pan-head screws, all in front, mean fast, easy installation.

## *industrial plants report:*

# *Starters keep production up!"*



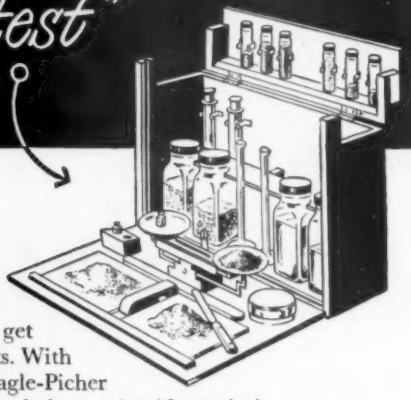

**LONG LIFE** is built right into the heart of G-E starters: the tough G-E *strongbox* coil (1). Winding is sealed in solid, molded plastic; dust, oil, moisture sealed out. This coil cannot be damaged by a maintenance man's screwdriver. Movable magnet of silicon steel (2) moves in straight line in permanently lubricated guides (3).




**DEPENDABILITY** is further assured by strong, simple construction. Magnets cannot stick shut because G-E starters have a *permanent* air gap (4) in stationary magnet. Gap never wears out—it is independent of striking surfaces (5). Unit construction (6) means no bearing pins. Note block of fine silver on contact tips (7).

**GENERAL ELECTRIC**

"I never realized the difference in floor absorbents until I saw this test"



Follow the lead of other alert maintenance men, purchasing agents and safety engineers and get the true facts on floor absorbents. With his portable laboratory, your Eagle-Picher man can give you—right at your desk—a scientific analysis of your floor absorbent. *There's no obligation on your part.*

By this scientific test, you'll find how much coverage you're getting . . . how much oil and water are being absorbed for given bulk. Yes, and you'll discover how much your absorbent is costing you in terms of absorption and coverage . . . how much it gives you in terms of safety and light reflectivity.

So that you may truly form your own conclusions, your Eagle-Picher man will be happy to actually let you conduct the analysis yourself.

We want you to see that Eagle-Picher Floor Dry is insoluble . . . chemically inert and non-combustible . . . that its light weight assures exceptional coverage . . . that its light color makes for brighter working areas, extra safety.

*Write today for full information.*

**Eagle-Picher Industrial Floor Dry No. 85**

EAGLE EP PICHER

**THE EAGLE-PICHER COMPANY**

*Since 1843 General offices: Cincinnati (1), Ohio*

(*Continued from page* 164)

embedded in a thick layer of dense foamed latex-rubber. It does not noticeably change the machine's working height. Made in two sizes and colors by Andrews-Alderfer Co., 1173 Home Avenue, Akron 10, O.

You'll get 30% more productive life out of its new **segmental circular metal-cutting saw** than any other segmental saw on the market, claims Henry Disston & Sons, Inc., 1033 Tacony, Philadelphia 35, Pa. Called the Disston Chromos, it features segments locked together by flexible tightening pins instead of rivets, giving longer life because there are no aligning rivets to limit sharpening.

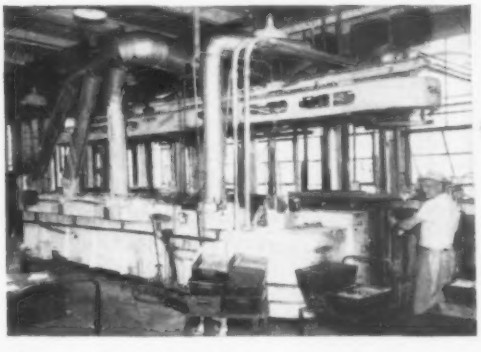
Eastman Kodak Company, Rochester, N. Y., has a new photographic paper for the production of **positive paper prints** either through reduction or enlargement. It can be used in a process camera to make direct reduction positives from large drawings, or it can be used with an enlarger to produce positive prints from positive microfilm records. The former application is in line with the trend to produce smaller prints of engineering drawings.

A reinforced **emergency liner** that is water-proof, tough and durable, and creped to stretch, is said to transform gouged, splintered truck interiors into smooth, scuff-free condition suitable for first class freight hauling. It is marketed by J. J. Lipp Paper Co., 323 W. Polk St., Chicago 7, Ill., in easy-to-handle 62" width rolls, 164 lineal feet per roll.

An improved "Live-Spiral" fluted **masonry drill** with oval flute and narrow land, that automatically lifts dust from the hole as it drills, has been announced by Carboloy Department, General Electric Co., Detroit 32, Mich. The drill is tipped with Carboloy cemented carbide, which gives it an extremely long life.

The Electric Auto-Lite Company, Toledo 1, O., has announced a **fuel pump** which can deliver 40 gallons per hour capacity, thus practically eliminating vapor lock. It operates from the engine cam, and is therefore interchangeable with other makes of pumps. Its design, however, is much simpler.

PICTURE COURTESY OF MACK MOTOR TRUCK CORPORATION



Udylite Full Automatic Plating Machine is used at Ross Gear and Tool Company plant, Lafayette, Indiana.

# UDYLITE EQUIPMENT ELECTROPLATES "REINS" FOR MODERN "MULES"

## ROSS GEAR AND TOOL COMPANY USES UDYLITE EQUIPMENT TO PLATE STEERING GEAR PARTS FOR MACK TRUCKS

The old work mule has been put out to pasture, his place taken by powerful, rugged motor trucks which can go anyplace the mule could—and faster. Endurance is a premium with these huge vehicles—breakdowns cost money and precious time.

Moving parts in these modern "mules" must be protected against wear and tear with a surface as tough as the jobs these trucks must do. So Ross Gear and Tool Company, suppliers of steering gears for Mack Motor Truck Corporation, plates cams and bearing races with Udylite methods and machines. This assures a uniform finish at minimum cost in materials and manpower . . . and prevents surface scoring of these vital parts.

Ask your Udylite Technical Man about other examples where Udylite is helping build better, longer-lasting products. Or write direct to *The Udylite Corporation, Detroit 11, Michigan,* for complete details on how Udylite can help your firm in metal finishing operations.

**PIONEER OF A BETTER WAY IN PLATING . . .**

TESTED SOLUTIONS • TAILORED EQUIPMENT
AUTOMATIC CONTROL IN METAL FINISHING

THE Udylite CORPORATION
DETROIT 11, MICHIGAN

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plastic protective equipment

keep you on the safe side

WILLSON MONOGOGGLES®

Workers wear Willson protective equipment willingly because these MonoGoggles® and other safety devices shown are lightweight and comfortable. MonoGoggles® illustrated above are available in flexible *Polythene* and fully transparent *Acetate* for extra side vision. Interchangeable lenses in clear plastic or Tru-Hue green. Ask for Willson—the leading line of respiratory and eye safety equipment for industry, farm and home use.

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**WILLSON PRODUCTS, Inc., 221 Washington St., Reading, Pennsylvania**


A simple, compact **microwave radio system** providing low-cost multiple channels for voice communication, telemetering, and remote supervisory and control functions is available from RCA Victor, Engineering Products Dept., Camden, N. J. The equipment may be used for point-to-point communication over distances up to 300 miles, using a chain of repeater stations spaced at intervals of approximately 25 miles.

Any drum, regardless of bead or rim size, can be handled with a new, simple automatic **drum-handling attachment** for gasoline and electric fork trucks says The Yale & Towne Manufacturing Co., Philadelphia Division, Philadelphia 15, Pa. Called the Marvel Lift-o-Matic, it can be attached to any Yale truck in a few minutes by the operator. No additional controls are required.

Continuous tissue service for a full day without refilling or checking is provided by a new **tissue dispenser** introduced by Steiner Sales Company, 740 Rush St., Chicago 11, Ill. The dispenser holds two rolls, the second one dropping automatically into place, ready for use, when the first roll is finished.

Loads and deflections of small compression and extension springs are accurately measured by a new precision **spring tester** having a load range capacity from ½ oz. to 25 lbs. The machine, a product of The Carlson Co., 277 Broadway, New York 7, N. Y., is said to be accurate to within ¼ of 1%, meeting the requirements of the National Bureau of Standards.

A new exterior post model of a **light-weight truck semi-trailer** with maximum payload capacity has been introduced by Trailmobile, Inc., Cincinnati 9, O. Available in both closed-top and open-top designs, it provides maximum interior loading capacity, is simple to repair, and can be maintained at minimum cost.

The L. S. Starrett Company, Athol, Mass., has added a new 12" gage to its line of No. 454 **vernier height gages.** It is said to be especially useful to toolmakers, inspectors and layout men because the bar has a 13" scale which permits taking accurate measurements over a full 12" range in thousandths of an inch. (A 12" scale cannot be read accurately beyond 11").

# Office Equipment and Supplies section of PURCHASING Magazine

NOVEMBER, 1952

Executive Office Suite in Steel—Courtesy of Security Steel Equipment Corp.

PURCHASING MAGAZINE—A CONOVER-MAST PUBLICATION
205 EAST 42ND STREET, NEW YORK 17, N. Y.

# Insurance, Banking and Office Buyers Hold Joint Conference in Boston

THE Association of Insurance Company Buyers and the Insurance, Banking and General Office Buyers Group of the National

Grant G. Dwyer, Boston, Conference Chairman

Association of Purchasing Agents, held their joint annual conference at the Sheraton Plaza Hotel, Boston, September 28th and 29th.

The Conference Committee headed by Phil Tangarone of the Phoenix Mutual Life Insurance Company, Hartford, president of the Association of Insurance Buyers, and Ernest Keyser, chairman of the Insurance Banking and General Office Buyers Group of the NAPA, with Grant G. Dwyer, John Hancock Mutual Life Insurance Company, Boston, as Conference Chairman, had developed a practical program of all-purchasing subjects for the joint meeting.

The program was featured by several interesting presentations, among them "How Purchasing and Planning Can Complement Each Other" by Roland Mangini, Planning Department Manager of the John Hancock Mutual Life Insurance Company, "The Traveling Requisition", by William Ryan, Travelers Insurance Company, Hartford, "The Real Cost of Company-Owned Printing Plants," by John Paine, State Mutual Life Insurance Company, Worcester, "Shipping Costs", Grant Dwyer, the John Hancock Company, "Inventory Control", by James Wilson, Mutual Life of New York, New York City, and "How to Buy Printing", by Hy Greenbaum, Court Square Press, Boston. At the conclusion of the business sessions Tuesday noon, September 30th, the delegates in body made a tour of the handsome new office building of the John Hancock Mutual Life Insurance Company where they viewed first hand the office and lighting arrangements, and the modern equipment and mechanical facilities that feature the building.

The Conference had been scheduled to coincide with the Annual Business Show sponsored by the

Philip Tangarone, president of the Association of Insurance Buyers, presided at the opening session.

National Association of Cost Accounts, which was being held in Boston September 30-October 2nd, and many of the purchasing men took advantage of the opportunity to inspect the attractions at the business show.

Following brief remarks by Chairman Phil Tangarone and Conference Chairman Dwyer at the first session Monday morning, the first speaker was Clyde Gay, vice president of the John Hancock Company. In the course of a talk on "What Management Expects of the Purchasing Department", he queried—Is it too much to say that management expects its Purchasing Agent to be (1) the best salesman in the organization, (2) the best public relations expert, (3) the best advertising man, (4) best head of department in personnel relations, (5) best in technical competence in his special field, (6) best in cooperation, playing a part in a team?

If he is best in all these things, Mr. Gay stated, he will merit great advancement in his company—his indeed is a bright future. Simple friendliness, he stated, is the purchasing agent's biggest purchasing tool, just as the salesman makes it his biggest selling tool. In our business lives, he continued, our common sense tells us that our relationship with our employees and with our suppliers must be carried on with a spirit of give and take. A proper concept of mutuality is no small back-scratching affair. Rather it is based on a healthy respect for the well being and integrity of the other fellow. Only in an atmosphere of profit in a broad sense to all parties, can we meet the creative objectives our society sets.

"How Purchasing and Planning Can Complement Each Other" was the subject of a paper by the next speaker, Roland Mangini, Planning Department Manager of the John Hancock Company. In the course of

Vice President Clyde F. Gay, of the John Hancock Company, said that simple friendliness is the purchasing agent's best buying tool.

his talk he stated that the most obvious reason why Purchasing and Planning Departments should com-

(*Please turn to page* 178)

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# the 39,000-word super velvet

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Venus Velvet . . . only 6¢ . . . for the money still the finest pencil you can buy.

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The great new Super Velvet seems to go on forever! **It's more economical** . . . writes 39,000 words in actual tests . . . that's more than four months at an average 500 words per working day! **It's smoother** from the first word to the last . . . because the lead is homogenized* for flawless, fine-grained consistency. No hardspots, no scratching ever interrupt its velvety flow. **And it's stronger** because the exclusive pressure-proofing* clinches wood to lead, ends internal snapping and breaking. **Get greater writing ease, greater pencil mileage** . . . put the 39,000-word VENUS Super Velvet to work in your office! Write for sample on your company letterhead.

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*Exclusive Venus process

Roland Mangini analyzed the functions of Planning and Purchasing, explaining their complementary relationship.

plement each other is that they are children of the same parent, namely, home office, or head office management and both are staff facilities servicing all company operating departments.

"This sets up a close tie-in for both", he continued, "and the utmost cooperation must be in effect for the best results as the final decisions must come from the user, normally the operating department, who have to produce with the methods, supplies and equipment available. Purchasing must buy for the consumer by considering quality, quantity, price and availability with an eye on the market, so as to be alert to opportunities which will be advantageous to the company. Planning is more of a sales agency of methods, procedures, proper equipment and standardization in cooperation with the Purchasing Department on such items as forms, supplies and equipment."

"Purchasing", said Mr. Mangini, is an art in itself, and "Planning" also now has definite responsibilities to various departments, and must be specialized in numerous phases involving methods, work simplification and measurement, effective use and standardization of equipment and furnishing, form standardization, and so on.

The responsibilities of the two departments do not overlap, he said, but there definitely must be good cooperative spirit and morale between the two and also with other departments.

"I do not know what the fascination is about Purchasing, but it seems as though every employee of the company wants to help the purchasing department by contacting vendors. A Purchasing Department on the other hand has no special desire to take on the functions of other departments, as they are well satisfied to be allowed to do their own specialized job without all the outside assistance.

"If Purchasing is not controlled properly, it is easy for individuals throughout the company to fall into the habit of having salesmen call on them direct instead of clearing through the Purchasing Department. This could easily lead to embarrassment, confusion and duplication of effort. It would often happen that neither purchasing nor planning would know what was being arranged until some individual had practically committed the company to a specific purchase.

"Such practice is not good business and may have the effect of orders being placed on the basis of personal preference, favoritism or lack of knowledge that there are other commodities on the market that are of the proper quality and can be procured for less cost.

"By co-ordination of Purchasing and Planning Departments, salesmen can be kept from contacting operating departments direct. We all have the utmost respect for salesmen and know that they should have a chance to display or demonstrate their equipment, and that the Purchasing Department should know that such an item or equipment is on the market. All such material brought to the Purchasing

James Wilson, Jr., New York, presented a paper on Inventory Control.

Department by vendors should be referred to the Planning Department. Arrangements to contact salesmen should be made through the Purchasing Department. The Forms Standardization and Control Unit of a Planning Department should coordinate very closely with the Purchasing Department."

Mr. Mangini cited several examples of where Purchasing and Planning have complemented each other with substantial savings as an end result. Among these projects were the standardization of carbon papers; another involved a snap out form with a saving of $5,000; and the use of high grade sulphite paper for letterheads.

Explaining "how far Planning goes" and "where Purchasing starts", in varied procurement, Mr. Mangini said that for office machinery, Planning conducts the research and recommends the type of machine, methods of use and determines specifications, if not standard. Purchasing contacts the vendor and issues the purchase order. For Office Supplies, Planning evaluates the supplies in use, and confers with Purchasing in regard to possible standardization. Purchasing pro-

(*Please turn to page* 180)

R. V. Boone of Bloomington, Ill. registers for the Conference.

Eliot P. Emerson and Phil Tangarone in pre-session conference.

# there's a big difference in "paperwork" costs

Somewhere in your office, maybe you could write certain records at twice the present rate — at half the cost per finished document — with Standard's business forms and paperwork simplification devices.

These devices for simplifying the ***writing process*** make a big difference in "paperwork" costs — and so does the ***analysis*** and planning behind Standard Register business forms. For Standard's men concern themselves with the system's purpose and the whole procedure, to develop ***better-working*** papers. And Standard's 40 years of ***form design*** experience and "know-how" in producing ***top quality*** business forms save hundreds of needless operations for 93 of America's 100 largest firms, and thousands of others.

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***Standard's Dual Feed on your business machine makes possible continuous, automatic operation in the preparation of two different forms as one.***

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BUSINESS FORMS

PS Paperwork Simplification

Ward F. Stevens, J. Philip Camp, and George H. Redford—Hartford, Conn.

June Sturgeon, Freda M. Klingenhagen and Grant Dwyer—Boston.

cures the supplies to be tested, and advises Planning when it feels it can make a better purchase from a new source of items in use. Purchasing determines the amount of purchase and the amount to be kept in stock, and places orders to the best advantage of the company. For Office Equipment, Planning's responsibility is to see that the office equipment is best suited for the work, and cooperates with Purchasing in developing standards of equipment for common types of clerical work. Purchasing takes over with the normal purchasing procedure. For printing, Planning reviews forms for revision, simplification and standardization, etc. Purchasing determines whether to print the form in the home office plant, or sends it to a commercial printer.

"In our company", he concluded, "Purchasing and Planning work hand in hand with each other. Neither department assumes the attitude of crossing functional lines."

The next speaker was William Ryan, Travelers Insurance Company, Hartford, who presented a paper, with forms on "The Traveling Requisition", and purchase record form. Among the advantages resulting from the use of the traveling requisitions are substantial saving in time through the elimination of individual requisitions; saving in forms as each card may be used more than 40 times; elimination of errors; and facilitating the issuance of purchase orders. The traveling requisition will be used by various company departments, involving more than 10,000 items. Mr. Ryan's paper will be published in a future issue of PURCHASING Magazine.

"Real Costs of Company Owned Printing Plants" was the subject of a paper by John Paine, State Mutual Life Insurance Co., Worcester, Mass. "Cost," he said, "may refer to outlays or expenditures made to acquire goods or services. The word cannot be defined unconditionally. Cost becomes an individual formula in each business enterprise. Cost to some means the actual money outlay, past and present, for the cost of production. To others, cost includes not only the cost of production, but in addition, the marketing and administrative expenses combined to represent an over-all commercial cost.

Mr. Paine reviewed the method of accounting followed by his company, and the factors considered when comparing the cost of company-printing and commercial printing. His paper will be published in the next issue of PURCHASING.

Elmont S. Tyndale, general sales manager of the Dyer-Clark Company, Lawrence, Mass., described the planned group replacement of fluorescent lamps, leading to tremendous economies and great increase in lighting efficiency, in the new John Hancock Life Insurance Company building in Boston, which is equipped with 43,000 fluorescent lamps and 21,000 troffer fixtures.

Prior to adopting the group replacement program, lamp burnouts exceeded the maintenance department's ability to replace them without adding personnel, and was costing 83c per lamp, not including overhead; further, dirt accumulations on the luminaires had reduced light output by as much as 35%. Mr. Tyndale said that depending on the distance of the burnout from the maintenance man's station, and on the height of the fixture, one-at-a-time replacements can cost anywhere from 50c to $3.00 or more for labor alone. Tests and experience show, he said, that it is good practice to plan a complete lamp replacement somewhere between 4000 and 6000 hours after the initial installation and to combine it with a fixture cleaning operation so that one labor cost accomplishes both fixture cleaning and relamping. Experiments show, he declares, that when 10-20% of the original lamps have been replaced (of necessity one at a time), the best 80% of lamp life

(*Please turn to page* 182)

Albert Chance, Chas. W. Bobb, Ernest J. Keyser, Robert B. Whitelaw and Walter J. Langendorfer—all of Philadelphia. Mr. Keyser is Chairman of the Insurance, Banking and General Office Buyers Group of NAPA.

R. J. Rejimbal, Manchester, N. H., Don Sleigh and Philip Gilman of Boston, and A. B. Appleton, Manchester, N. H.

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typed on an IBM Electric
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Available in 6 colors as well as gray

# Get the most out of your purchasing forms...

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(*Continued from page* 180)

has been received from the installation. Beyond this time burnouts will occur more and more frequently and lamps still burning will give less and less light though using as much electricity.

After considerable study, the John Hancock company decided to engage the services of an outside contractor, and a contract was signed with a large cleaning company in Boston to "take down and wash all louvers, remove fluorescent tubes, wash all reflectors, and reassemble the fixtures using new tubes, and leave all fixtures in an operating condition, unless the troubles were electrical." If electrical trouble existed a red tag was to be hung from the fixture. A unit consists of one louver, one reflector and two tubes. The unit price included all supplies, insurance and other overhead costs.

Mr. Tyndale stated that the John Hancock officials are delighted with the results of the group lamp replacement program. "They figure a 100% saving in group replacement versus spot replacement because, for efficient lighting, all fixtures require washing at periodic intervals. Since lamps would have to be removed during the normal washing operations, it costs nothing to replace the old lamps with new. Vice President J. R. Magee also declares 'We effect a 76% saving by contracting for group replacement from an outside firm. The saving is made by reducing the permanent lamp maintenance staff to a minimum. Two men now keep up with spot replacements necessary between group replacements.' "

**Wm. T. Ryan of Hartford and Charles W. Bobb of Philadelphia.**

The problem of disposing of 43,000 fluorescent tubes was a major one. The false bogie of "dangerous fumes and powders from broken lamps" caused a problem with trash haulers. Because there is a thriving business in used lamps by some unscrupulous exporters, John Hancock officials did not want to take the chance of disposing of the lamps intact. A "tube crusher" was designed by the maintenance department and the Dyer-Clark Company. Lamps are fed into a long pipe leading to a motor-driven impeller housed in a metal box submerged in a pan of water. The water prevents glass from flying and after the water has drained off, the glass is shoveled into trash cans and disposed of like ordinary office trash.

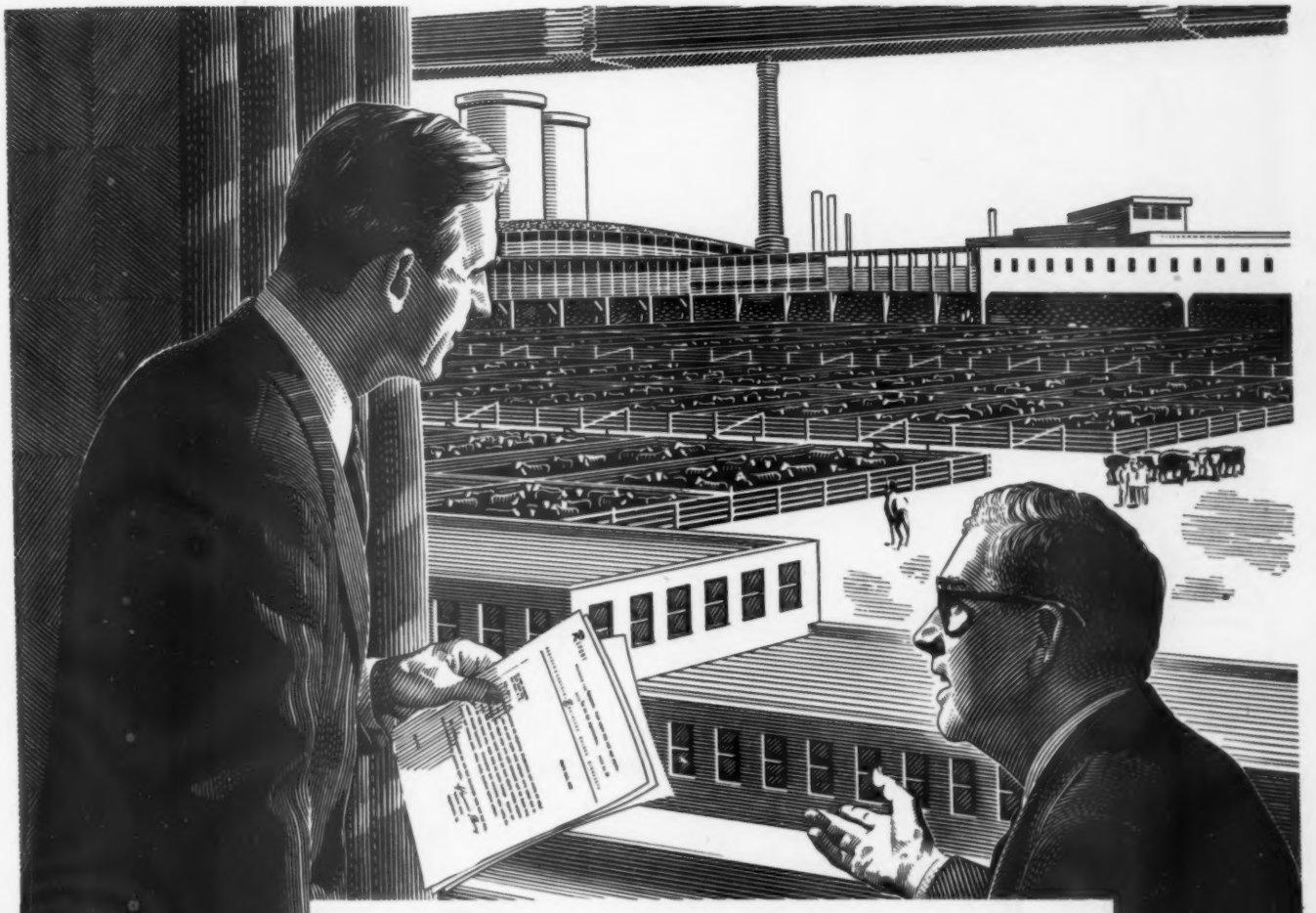
**Willard Gardner's subject was "Efficient Shipping."**

Hy Greenbaum of the Court Square Press, Boston, gave a talk on "How to Buy Printing", presenting an interesting exhibit of color and general commercial printing. "Even very simple printing, like forms", he said, "is not a matter to be undertaken too lightly." You should know the qualities of paper, and you should know the sizes that make for both economy in printing and convenience in use.

Commenting on the two principal branches of printing—letterpress and offset—he said that "Neither of these processes is more important than the other. Each has its place, depending upon the kind of printing job being considered. There is no rule in selecting one process or the other. There are many factors which would determine the making of a choice. These are quantity, size, kind of stock desired, size of illustrations, the reuse of material, and the kind of copy available.

"A printing job should not be started without a well-thought-out plan", he said. The following decisions on specifications should be answered before your piece of printing can get under way: Format—booklet, broadside, bulletin, catalog, leaflet, display, postcard, etc.; Style—plain, typographic, text, photos, etc.; Size—quantity, colors, kind of paper, type of finish. Unless these decisions are reached there is bound to be wasted motion or materials along the line, and therefore rising

(*Please turn to page* 184)



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**You can obtain business printing on Hammermill papers wherever you see this shield on a printer's window. Let the Guild sign be your guide to printing satisfaction.**

**SEND THIS COUPON** for the FREE *Cockletone Bond* Portfolio. It contains a wide assortment of good, modern letterhead designs. You'll find it helpful in improving or redesigning your present letterhead. We will also include a sample book of *Cockletone Bond*.

Hammermill Paper Company, 1461 East Lake Road, Erie 6, Pennsylvania.

*Name*_____

*Position*_____

Please write on, or attach to, your *business* letterhead.)

P-NOV.

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# There's real "pay dirt" today in modernization of paper work

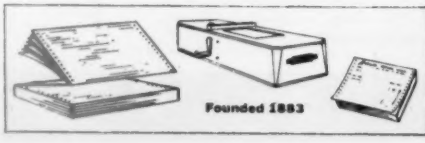
Why should management regard office operations as a fixed cost, as is done in many concerns? We repeatedly find in companies large and small that the office—especially its paper work—is as vulnerable to money-saving improvement as the factory.

It takes approximately $60,000 in sales, on the average, to pay the annual salary of one clerk. This fact emphasizes the importance of avoiding waste in clerical effort. Unnecessary, out-of-date, or poorly designed forms waste clerical effort and keep costs high. Periodic study of office forms often reveals opportunities for effecting substantial economies.

Modernization of paper work usually brings collateral savings, too, in reducing slow-downs in other departments. If you want to hit real "pay dirt" in economies, dig into your paper work.

As a starter, fill out the coupon below, mentioning the kind of forms you would like to improve, nature of business, and office machines used. We will then make up a folder of typical samples from our Forms Library to suggest a solution to your problem.

*Autographic*
**BUSINESS FORMS**
AUTOGRAPHIC REGISTER COMPANY
219 7th Street, Hoboken, New Jersey




AUTOGRAPHIC REGISTER COMPANY
Hoboken, New Jersey

We would like to receive a folder of sample continuous forms for.....
kind of forms
Forms will be used on.....
type of machine
The nature of our business is.....
.....
NAME.....
POSITION.....
COMPANY.....
STREET.....
CITY.....STATE.....


(*Continued from page* 182)

costs, and probable dissatisfaction to both customer and printer.

"The choosing of a printer is important," he continued ,"for usually a purchasing agent is only as good as his suppliers. Purchasing agents should ask themselves the following questions when considering any printer:

"Is he a representative, established member of his craft? Does he offer quality, service, good delivery, etc.? Does the printer accept any kind of job whether he is equipped to handle it or not? What kind of equipment does he have? Does he have constructive ideas to offer? Does he farm out work to other printers? Does he have all of the facilities in his shop for the jobs he takes?"

The printer knows from experience, he said, that those purchasing agents who work closely with him in advance of a job, and who are thoughtful of a printer's problems usually get the best work over the long pull. Printers usually ask the following questions:

Is the job a rush job? Does the buyer make all jobs "rush" jobs—or a majority? Does the buyer require excessive proofs, or excessive alterations and changes? Does the buyer know clearly what he wants from the beginning of a job? Does the buyer insist on extra services gratis?

Is clear copy furnished? Does the buyer unnecessarily 'phone the printer about work? Is the buyer reasonable on adjustments? Does the buyer give the printer a substantial annual volume? Does the buyer send all his fussy jobs to the same printer, or does he give the printer a fair average of jobs? And, does the buyer ask for an excessive number of bids without awarding volume sufficient to give so many bids?

"So you see," he concluded, "it all comes down to a matter of mutual understanding of each other's problems. If you were to ask me to explain in one sentence 'what is the most important thing about a printing job?' I'd say 'Let's study it and talk it over first.'"

Other speakers included Willard Gardner, Sears Roebuck, Boston, whose subject was "Efficient Shipping"; Eliot Emerson, Liberty Mutual Insurance Co., Boston, "Paper, Vendor Experience"; Arthur Appleton, New Hampshire Fire Insurance Co., Manchester, N. H., "Paper, Envelope Purchasing"; James Wilson, Mutual Life Insurance Co.,

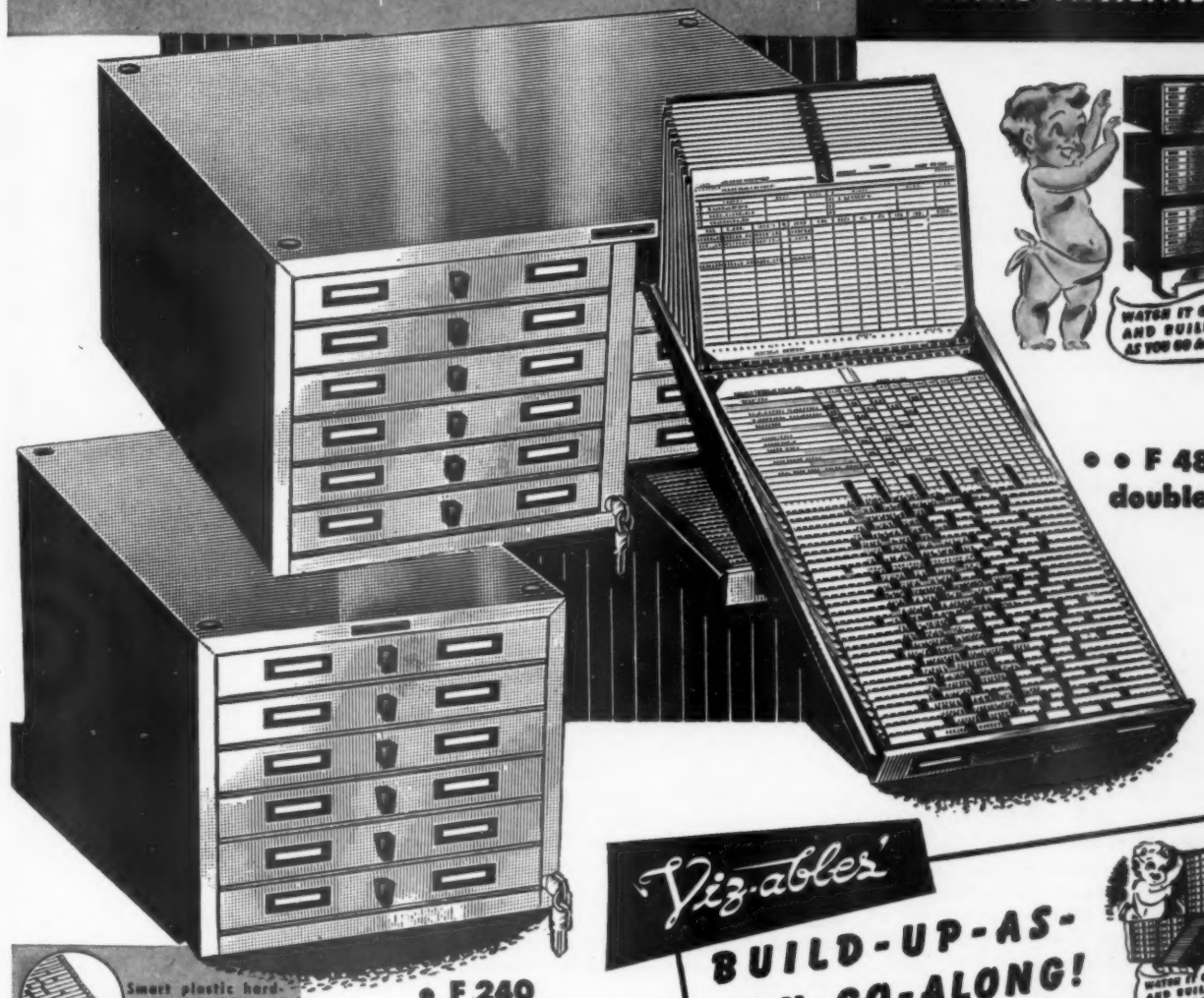
(*Please turn to page* 188)

# Steelmaster 'Viz-ables'

**THE WORLD'S LOWEST COST FILING SYSTEMS!**

## The Futura 'Viz-ables'

**VIZ-ABLE CARD FILING FACILITIES**

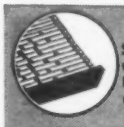


• • F 480 doubles

• F 240 singles

'Viz-ables'

**BUILD-UP-AS-YOU-GO-ALONG! WATCH IT GROW**



Smart plastic hardware — double card holders for fuller indexing . . . organizing.

Easy removability of cards — simple replacement, system always in flat top efficient operating position — no rolling, scrolling.

Perfectly adaptable for all systems of signals. Pick your own.

Uniform visibility of pockets — full .0025 visibility. Pockets die cut for 3x5, 4x6, 5x8 cards.

Security cabinet locks available to close all drawer sections.

★ **Full "eye-range" visibility**
★ **An easy portable, workable, visible system**
★ **At a remarkably low price.**

**THE FUTURA "VIZ-ABLES"**

| ITEM NO. | DESCRIPTION | DRAWER SECTIONS | FOR CARD SIZE | CARD CAPACITY | DIMENSIONS H. | W. | D. | SHIP WT. |
|---|---|---|---|---|---|---|---|---|
| F240 | • Single Cabinet Futura "Viz-ables" Complete 240 pockets | 6 | 5 x 8 | 240 ea. side 480 front & back | 9" | 10¼" | 16" | 30 lbs. |
| F480 | • • Double Cabinet Futura "Viz-ables" Complete 480 pockets | 12 | 5 x 8 | 480 ea. side 960 front & back | 9" | 20" | 16" | 55 lbs. |
| | Pocket Capacity Per Drawer—40 | | Inside drawer dimensions | | 1⅛" | 9" | 13¾" | |
| VB | Sanitary Base for F240 | | | | 15" | 10¼" | 16" | 7 lbs. |
| DVB | Sanitary Base for F480 | | | | 15" | 20" | 16" | 10 lbs. |

Available in grey or green—locks extra

Literature Available

**art steel sales corp. new york 63 n. y., u. s. a.**

# NEWS FROM PANAGRA ABOUT COLITHO

"Colitho #75 Printing Masters have turned out the finest quality printing."
"—printing costs have been held to a minimum—"
"Results in terms of efficiency, economy and quality have been so good that we feel justified in praising the Colitho #75 Printing Masters."

People in all kinds of businesses enjoy the happy experiences which Mr. O. Z. Johnson, Maintenance Superintendent for Pan American-Grace Airways, describes in his unsolicited letter. They know because their offset duplicating too, is on the high quality level attainable with Colitho Plates and Colitho Offset Duplicating Supplies.

It's you who have not yet tried Colitho who still have a pleasant surprise coming —and believe Mr. Johnson, if not us— you will be surprised at the clean, neat work and the volume of it you'll get from Colitho Plates.

Colitho Plates were designed universally for all duplicators. They must stand on their own merits and stand they do!

Colitho Plates are easy to prepare — write, type, print, or draw—and how quick! They require no pre-treatments— no aging—and no pampering. You handle Colitho Plates like an ordinary sheet of paper, yet the work comes out free of smudges and fingermarks. You can even fold and mail them! Long runs, re-runs and long life are Colitho characteristics which result in real economy.

So, find out why Mr. Johnson is so enthusiastic. Mail the coupon for samples and the complete Colitho story. (We'll tell you also how the Colitho "One-Write" idea cuts cost in business systems paper work.)

COLUMBIA RIBBON & CARBON MFG. CO., Inc.
1502 Herb Hill Road, Glen Cove, L. I., New York

Colitho

**OFFSET MASTER PLATES**

*Colitho plates and supplies make any offset duplicator a better duplicator.*

Colitho Plates are adaptable to purchasing, manufacturing, distribution, selling, billing and accounting forms.

COLUMBIA RIBBON & CARBON MANUFACTURING CO., Inc.
1502 Herb Hill Road, Glen Cove, L. I., N. Y. P-11
*Please send me a copy of the Colitho Manual and samples of Colitho Masters.*

Name_____
Title_____
Company_____
Address_____
City_____ Zone____ State_____
Make of Duplicator_____ Model_____
Plate Size_____ Clamp Style_____


## NAMED RESEARCH DIRECTOR OF VICTOR ADDING MACHINE CO.

Oscar Sundstrand, inventor of the first 10-key touch system adding machine, has been appointed to direct research and development activities for a new laboratory of the Victor Adding Machine Company in West Hartford, Conn. Mr. Sundstrand is one of the pioneer inventors in the industry and has devoted nearly 40 years to business machine

Oscar Sundstrand

invention and development. It was back in 1913 when he introduced the first adding machine from his plant in Rockford, Illinois. The Underwood Corporation later acquired his business. He estimates that he has designed and developed up to 100 different models of business machines. The research laboratory in West Hartford is in addition to the research department in the Victory factory in Chicago which is under the direction of Thomas Mehan.

* * *

## ORDER M-65 COVERING METAL PRINTING PLATES REVOKED

Lifting of limitations on the length of time obsolete printing plates could be held by various printing establishments was recently announced by J. Noel Macy, Director of the Printing and Publishing Division of the National Production Authority, Department of Commerce.

The action was effected through revocation of NPA Order M-65, Conservation of Metal in Printing Plates, which was issued May 31, 1951 to conserve supplies of copper, aluminum, zinc, chromium and nickel.

## *Great* NAMES IN INDUSTRY...
## CHOOSE *Great* DESK TOP EQUIPMENT

**BERT M. MORRIS CO. is *foremost* in the field of *matched* Desk Top Equipment.**

The complete setting shown—pen set, memo pad, letter tray, ash tray, and phone rest, retail for less than you would expect to pay for *one* fountain pen set.

**MORRIS FOUNTAIN PEN SET**—A desk fountain pen with beauty of design and *real* writing utility. Concealed "push button" filler and thread-in point section. For long life and smooth writing all sets are supplied with iridium-tipped points. A real time and money saver in any office.

**THERE IS NO SUBSTITUTE FOR QUALITY.** *All Morris writing sets are equipped with iridium tipped points and each point is tested and approved at factory for writeability.*

5 POINTS FOR "Write-ability"

Morris Fountain Pen Set with Northrop Aviation, Inc., insignia

Available in — Grey — Bronze — Walnut — Mahogany and Green



**LETTER TRAY** — strong two point suspension allows access from entire front and both sides. Tiers quickly added, legal or letter size.

**BOOK ENDS** — at last — inexpensive book ends to match modern office furniture.

**MEMO PADS** — available in two types. With jewelers bronze bar that drops as paper is used, or standard box style.

**MORRISET** — The constant flowing, finest all-round writing implement. Holds a *full 2½ ounces of ink.* Choice of 5 quickly replaceable "thread in" points—extra fine, fine, medium, broad, stub.

**ASH TRAY**—A real He-Man ash tray. Glass lined, perfect for any desk or conference table.

**Desk Top Package Deals—$100 and $200**
**Inquire about the surprisingly low cost of matching your desk with these items.**

**BERT M. MORRIS CO.**

Dept. P-11, 8651 West Third Street
Los Angeles 48, California
In Canada: McFarlane Son & Hodgson, Ltd., Montreal, Que.

Perfect Gift

"444"

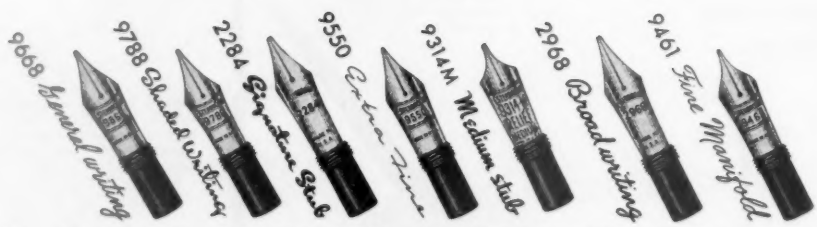
DESK PEN SETS

for the man (or woman) who works at a desk

TO SELECT OR REPLACE . . . HERE'S ALL YOU DO
Finger grip never touches ink. No chance for ink to touch you.
"Ink-Locked" against accidental spillage. Can't leak. Won't flood. As easy to clean as a saucer.
Base holds 40 times more ink than ordinary fountain desk pen sets.

*Single and double sets in service and executive models to harmonize with any desk.*

with the right point for every writer




Only a few of the more popular point styles shown. All points instantly replaceable in case of damage.

*ASK YOUR STATIONER FOR A DEMONSTRATION*

Esterbrook®

"444" DESK PEN SETS

**The Esterbrook Pen Company, Camden 1, New Jersey**

**The Esterbrook Pen Company of Canada, Ltd., 92 Fleet St., East; Toronto, Ontario**

COPYRIGHT 1952, THE ESTERBROOK PEN COMPANY


(*Continued from page* 184)

New York, "Inventory Control", and Grant Dwyer, John Hancock Mutual Life Insurance Company, Boston, "Shipping Costs." Mr. Gardner told about the savings made possible by the use of expendable pallets, which reduced the number of units to move from a car to 27 units instead of 1300. The savings, were tremendous, he declared. Mr. Dwyer stated that a study of shipping at the John Hancock Company, resulted in a saving of $26,000 during 1951, using six different methods of shipping, as compared with a shipping cost of $84,000 in 1949. The saving in 1952, using 14 different shipping companies, resulted in a saving of $52,000. The saving per hundredweight was about $3.00.

Time did not permit of the presentation of a paper by Kenneth M. Reed of the Mutual Benefit Life Insurance Company, Newark, on "The Use of Multilith Equipment." This paper is included in complete transcript of the meeting, which is being prepared for distribution to the membership.

## OFFICE SPACE UTILIZATION INCREASED A THIRD BY NEW TYPE FURNITURE

Techniplan steel modular office furniture, designed to provide larger working surfaces and convenient files and other facilities in compact

**The basic L-shaped unit with easy to reach drawers and ample work surfaces.**

and attractive form, was recently introduced by the Globe-Wernicke Company. Furthermore, it is stated that in the average office, the Techniplan equipment can be utilized to make space available for as much as up to 36 percent more help in a given area.

The heart of Techniplan is the "L" design. A full sized desk top is provided for the worker, and attached at right angles to the desk top is an auxiliary top, the two sections forming an "L" shaped single desk unit. Plenty of foot and leg

(*Please turn to page* 190)

# Bracelets that cost the boss plenty

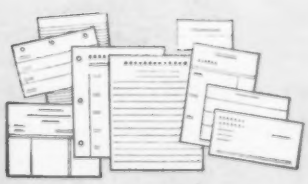
She wasn't really handcuffed, but it sure felt like it—the poor system that kept efficiency low and cost high! Record-keeping was disorganized, information was lost, there couldn't be any teamwork.

Then a Moore man was invited in. He looked at 9 separate forms that were causing confusion. In their place he designed a 3-part Manifold Book. It is used by 26 people for a dozen purposes—a simple pencil check says which. One copy goes to Personnel and Payroll; one to Telephone Operator and Gate Office; a third is held. It saves 8 writings and about $1500 a year.

Can you use improvements like this? Let a Moore man show you the widest range of forms available anywhere. He knows how to design *the right business form for every form of business.*

## How she got free

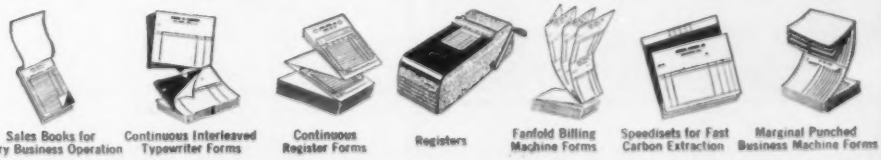
**with** Moore Manifold Book . . . 1 writing



**instead of** 9 systems . . . 9 writings

**MOORE** BUSINESS FORMS, INC.

Niagara Falls, N.Y. □ Denton, Tex. □ Emeryville, Calif. □ Over 300 offices and factories across U. S. and Canada



Sales Books for Every Business Operation | Continuous Interleaved Typewriter Forms | Continuous Register Forms | Registers | Fanfold Billing Machine Forms | Speedisets for Fast Carbon Extraction | Marginal Punched Business Machine Forms

THIN PAPERS

Reduce
MAILING
TYPING
FILING
Costs.

Use
ESLEECK
THIN PAPERS

Air Mail Bond
Clearcopy Onion Skin
Fidelity Onion Skin
Laid Thin Papers
Prestige Onion Skin
Superior Manifold
Thin-Opaque

Recommended for
Thin Letterheads, Copies,
Records, Forms,
Advertising.

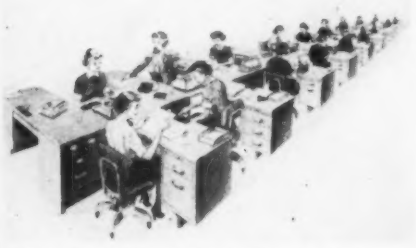
Ideal for Air Mail, Branch
Office and Foreign
correspondence.

SEND FOR SAMPLES

ESLEECK
Manufacturing Company
Turners Falls, Mass.


(Continued from page 188)

room is provided under both the desk and auxiliary top. All parts of each "L" shaped station are firmly joined by special interlocking devices. Additional components can



The flexibility of Techniplan is demonstrated by this "production line" office arrangement.

be added to the basic desk structure whenever they are needed. The horizontal sections provide whatever type of filing drawers, card files and storage compartments that the secretary, accountant, executive, salesman or other worker might need.

Illustrating the versatility of the new furniture, and the feature of semi-privacy.

The units can be equipped with acoustic, glass, or steel partition panels for semi-privacy. Electric conduits to provide current for inter-com systems and electrical office machines can be installed on the partitions, and fluorescent lighting fixtures have been designed for attaching beneath the shelves. Hundreds of arrangements can be devised with the equipment.

* * *

## ANNOUNCE CORRESPONDENCE SCHOOL IN OFFICE MANAGEMENT

The opening of a new Correspondence School in Office management, has been announced by the National Office Management Association. This home study program is designed to fill in an important gap in presently available executive development and training programs, and was developed specifically for the benefit of office executives who find it difficult to include time for formal office management training in their busy work scheduling.


*Planned*
BUSINESS FORMS

**LITHOSTRIP**
Continuous, marginal punched forms with carbon interleaving.

**LITHOSET**
Handy, individual form sets with one-time carbon interleaving.

**LITHOFOLD**
Continuous fanfold forms, fully or partially carbon interleaved.

WRITE FOR FREE FOLDER that tells *how you can cut forms-handling costs 33% and more!*

the American Lithofold
CORPORATION
Dept. P, 500 Bittner St., St. Louis 15, Mo.
OFFICES IN PRINCIPAL CITIES

PENDAFLEX
you ride the rails for speed and style...
Pendaflex folders hang by 2 metal rods.
Rods fit onto rails—the top of Pendaflex frames.
Pendaflex frames fit all standard filing drawers
use folders on rails... the speedy way to file

Oxford Pendaflex folders give to filing what the modern railroads give to travel —SPEED! With Pendaflex—the hanging folders that glide on rails, you zip through your work faster! easier! Pendaflex folders can't sag and slouch. They hang on rails straight up and down.

***Write today for Trial Drawer test to:***

Oxford FILING SUPPLY CO., INC.
115 CLINTON ROAD, GARDEN CITY, N.Y.

The school presently features two courses in office management; one for executives, the other for junior executives. Other courses, notably one aimed at helping the office executive move into the top management level, will be added later when the program has gotten underway.

Licensed by the state of Pennsylvania, the school is open to both members and non-members of the association. The National Office Management Association, known as NOMA, is a non-profit, non-political organization, composed of nearly 14,000 members in a cross section of industry and business. Its purpose is to stimulate better management through the office by an exchange of information. Chapters are located in 134 major cities throughout the United States and Canada, with members-at-large in more than 20 foreign countries.

The two home study courses now available were prepared by a distinguished group of practicing office management authorities and educators. Dr. Wm. P. Polishook, assistant dean of the Teachers College and Director of the Department of Business Education, Temple University, Philadelphia, served as chairman of the National Correspondence Courses Committee, and has now taken over direction of the school.

Both of the programs are based on the book "Office Management—A Handbook" edited by the late Dr. Coleman L. Maze, who was acting chairman of the Management Department, New York University.

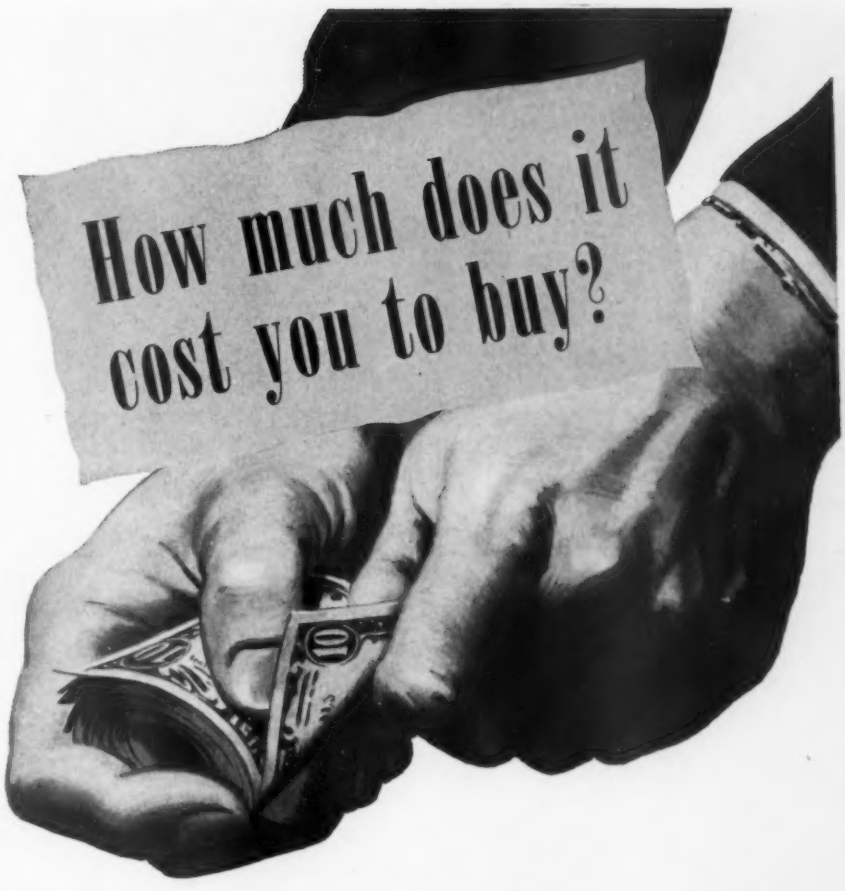
Each course is composed of 10 sections dealing with a specific facet of office problems. An indorsed certificate of achievement is presented to those successfully completing each course, based on a final "open book" examination dealing with certain of the important points of each section.

The following topics are among those given special emphasis in the courses:

- How to Build an Office Force
- How to Select and Maintain Furniture and Equipment
- Purchasing Designing of Supplies
- Simplified Methods of Carrying Out Office Objectives
- How to Apply Successful Techniques of Supervision
- Development and Maintenance of a Standardization Program.

Fee for the entire course, including the text, 10 lessons, guidance by trained specialists, evaluation and certification, is as low as $30.50, and in all cases less than $50. The

(*Please turn to page* 192)




Business faces rising purchasing costs . . . the paperwork cost necessary for each item bought. To reduce these costs, maximum simplicity, speed and accuracy in the paperwork procedures of purchasing are needed.

The Formaster plan does just this. *It's a one-writing purchase order unit, tailored to your specific requirements.* This flexible plan includes a copy of the original order for immediate use, plus a Remington Rand Rem-Master Hectograph Unit to reproduce further copies as wanted.

This *one* writing, *one* proofreading plan assures complete accuracy and perfect registration on carbon and hectograph copies. Formaster speeds work output . . . saves you valuable dollars and invaluable hours.

Get complete information now on how Formaster can cut your purchasing costs and speed work output. Mail the coupon today!

Remington Rand INC.

Remington Rand, Room 2483, 315 Fourth Ave., New York 10, N. Y.

Please furnish complete details on your Formaster Purchase Order Plan to cut purchasing paperwork costs. No obligation, of course.

Name_____

Firm_____

Title_____

Address_____

City_____ Zone_____ State_____

For Sheer Pride of Ownership

MOST people buy Steel Age Desks because they're such a sound investment in greater office efficiency. But above that, you should consider the sheer *pride* of owning such a distinctively designed and painstakingly crafted piece of office furniture. If you haven't seen the *Executive* model yet, you owe it to yourself to visit your Steel Age Dealer very soon.

Steel Age

Corry-Jamestown Mfg. Corp., Corry, Pa.


(*Continued from page* 191)

difference in price is dependent in part upon whether the executive taking the course is a member of NOMA or whether his company is represented by membership in the association.

A 12-page booklet outlining full details concerning the correspondence courses program will be sent by the association to anyone upon request. Request for copies of the booklet or for additional details should be addressed to T. W. Kling, Staff Director, Personnel Division, National Office Management Association, 132 West Chelten Avenue, Philadelphia 44, Pa.

## ROYAL'S NEW YORK MANAGER MARKS 40 YEARS OF SERVICE

J. H. Forshay, manager of Royal Typewriter Company's New York sales office recently completed forty years of service with the company.

J. H. Forshay

He came up to his present post through the ranks, starting as a bookkeeper in Royal's field department in 1912 where he became collection manager in 1916. He has held the posts of accounting department clerk, chief clerk in the suboffice department, chief clerk in the sales office department, general sales department clerk and treasurer's department clerk. He was named credit manager in October 1925, and the following year was elevated to assistant secretary. He received his appointment to his present post on December 1, 1931.

## MANAGERSHIP CHANGES ANNOUNCED BY VICTOR

George Mulholland has been reassigned to his former territory comprising Virginia, West Virginia, Western New York, Eastern Ohio,


Redifixt

BUSINESS FORMS
CARBON INTERLEAVED

Continuous or Single Sets
Invoices • Sales Slips
Shipping Records • Accounting and Tabulator Bookkeeping
Machine Forms • Any Form for Any Business Purpose

NO PRICE RISE ON
*RediFixt*
W-2
TAX FORMS
for 1952

Consolidated Business Systems, Inc.

DEPT. 006
30 VESEY STREET, NEW YORK 7



Good Taste in Envelopes

*only SHEPPARD envelopes have MINT-E-SEAL,® the original flavor flap.*

Sheppard ENVELOPE CO.

ONE ENVELOPE TERRACE, WORCESTER 4, MASS.
*New York Office:* 1133 Broadway, N. Y. 10

*Free — For good printing — better taste in envelope selection write today for Sample Kit Dept. #145.*

Pennsylvania and Maryland as district manager after an absence of a year on a special assignment. E. A. O'Brien who temporarily was in charge of the territory in Mr. Mulholland's absence, has been re-appointed district manager in the Mid-Western States area where he represented Victor in Illinois, Indiana, Western Ohio, Michigan, Wisconsin and Minnesota.

* * *

### MOORE INTRODUCES POCKET REGISTER WITH MEMO HOLDER

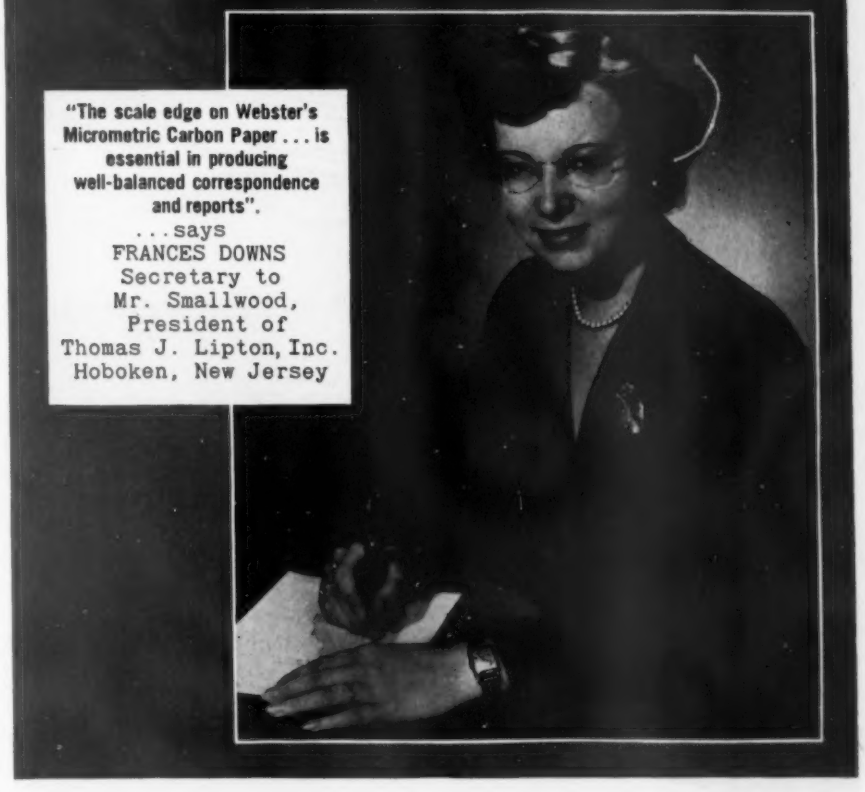
Illustration shows a Pocket Register with a folding memo holder, announced by Moore Business Forms, Inc., Niagara Falls, N. Y. This adaption of the Moore Pocket Register was developed primarily as an aid to firms who need a compact unit for the use of service men. The device consists of the Moore featherweight Pocket Register with a hinged metal plate or clip-board attached to the right side of the register. The plate has a chrome-plated spring clip on the top for holding a group of separate memos. When not in use, the metal memo holder folds over the top of the register, forming a protective cover. The device is small enough to fit in the pocket, holds up to 100 duplicate sets and contains a generous file compartment.

* * *

### COLORED PENCIL LEADS BEND UNDER PRESSURE

A line of colored pencils tradenamed Flexicolor No. 1800, which it is claimed will stand up under pressure like firm graphite leads, yet deposit colors like soft crayons, was recently announced by the Koh-I-Noor Pencil Co., Inc., Bloomsbury, N. J. The pencils sharpen easily, flex under pressure without breaking, and mark with a smooth, clean cut stroke. A newly developed plastic binder imparts the pliable strength, without reduction in the marking qualities. The pencils are hexagon, and made in 24 colors.


# Tip from America's Top Secretaries



**"The scale edge on Webster's Micrometric Carbon Paper . . . is essential in producing well-balanced correspondence and reports".**

. . . says
FRANCES DOWNS
Secretary to
Mr. Smallwood,
President of
Thomas J. Lipton, Inc.
Hoboken, New Jersey

Mrs. Downs is one of many outstanding secretaries who have discovered how time and trouble are saved by Webster's Micrometric. The exclusive scale edge takes the guesswork out of letter placement by telling at a glance how many lines of typing space remain on a page.

Output increases when re-typing chores resulting from "running over" are eliminated by Micrometric. Impressions are sharp and legible. The scale edge is uncoated —keeps hands and papers cleaner when carbons are removed.

Leading secretarial schools recommend Webster's Micrometric. There's a Webster weight for every office use. Give Webster's a trial and see the difference—in finer and faster work.

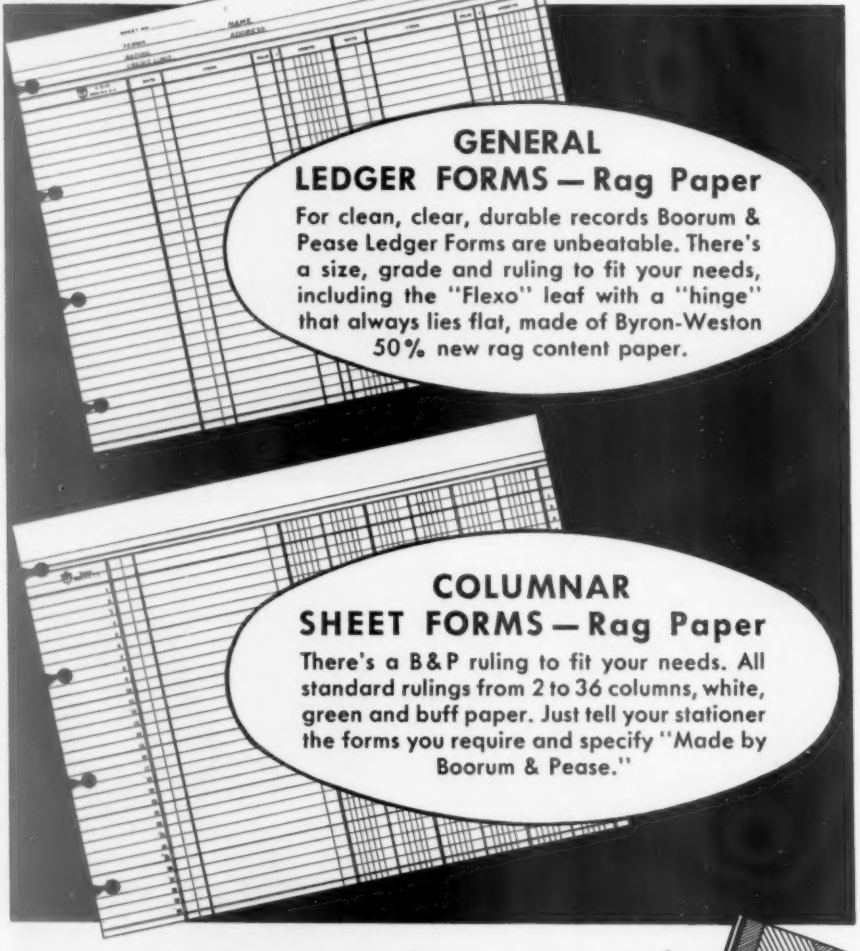
See Webster's complete line of duplicating and spirit supplies at your stationers.

## F. S. WEBSTER COMPANY

**7 Amherst Street, Cambridge 42, Mass.**

B+P... for clean writing

for smooth erasing



GENERAL
LEDGER FORMS — Rag Paper

For clean, clear, durable records Boorum & Pease Ledger Forms are unbeatable. There's a size, grade and ruling to fit your needs, including the "Flexo" leaf with a "hinge" that always lies flat, made of Byron-Weston 50% new rag content paper.

COLUMNAR
SHEET FORMS — Rag Paper

There's a B&P ruling to fit your needs. All standard rulings from 2 to 36 columns, white, green and buff paper. Just tell your stationer the forms you require and specify "Made by Boorum & Pease."

Remember NOTEAR® Ring Book Sheets for Strength without Bulk.

FOR EVERY RECORD—A WAY TO KEEP IT


## ROYAL TYPEWRITER OPENS NEW BRANCH OFFICES

The Royal Typewriter Company recently announced two additions and one change in its branch office structure, as follows:

Albuquerque, N. M. New office opened at 1414 Central Avenue, East, with F. M. Miller in charge.

Long Beach, Calif. New branch office opened at 515 Pine Street under the managership of F. K. Pace.

Charleston, W. Va. Branch headquarters have been moved from Huntington to Charleston, with R. P. Greer who headed the Huntington office, in charge.

* * *

## EDISON INTRODUCES LIGHTWEIGHT DICTATING-TRANSCRIBING MACHINE

A compact, lightweight dictating and transcribing machine which can be carried with ease under the arm or in a brief case, and yet stand heavy duty office use, styled the Voicewriter, was recently introduced by Thomas A. Edison, Inc.

**The machine is small enough to be tucked under the arm or carried in a brief case.**

The machine, which weighs but 11 pounds has been thinned down to less than 2½ inches, and uses Vinylite "diamond discs" which have a capacity of 30 minutes of dictation. Aside from its lightness and smallness, the machine features simplicity of operation. A single knob "4-in-1" control performs all the functions of permitting executive or secretary to recall the last few words spoken or to reproduce the entire content of the disc.

Operating on only 25 watts, the machine has two lights which indicates when the machine is on and when it is ready for dictation, and

an end monitor which gives audible warning when the end of the disc is near.

The size of the machine is 11-15/16" wide x 9-7/16" deep and 2-7/16" high. Current—115 volts—

**The Voicewriter can be used either as a dictating machine or a transcribing machine.**

60 cycles a.c., converters being available for other currents and automobile use. It has a turbine-type blower for cooling the mechanism, and the microphone also serves as a speaker for playing back when desired.

### DIEBOLD NAMES MUNSTER HOUSTON BRANCH MANAGER

Herman Munster has been named manager of the Houston, Texas branch of Diebold, Incorporated. He joined the Diebold Sales organization in Dallas in 1948, and early in 1952 was named assistant branch manager in that city.

### SUPPLY ECONOMICS EFFECTED BY NYQMPA

An extensive program of supply economy has resulted in greater conservation of office equipment and supplies, according to Colonel F. G. Thompson, QMC, Commanding Officer, New York Quartermaster Procurement Agency, 111 East 16th Street, New York 3, N. Y.

Comprehensive methods of supply distribution and control have achieved greater utilization of office fixtures, furniture, and office machinery required by NYQMPA, the Armed Services Textile and Apparel Procurement Agency, and the New York QM Market Center, all located in this building, Colonel Thompson stated.

Where possible, equipment has

(*Please turn to page* 196)


IN THE FINEST OFFICES . . . CRESTLINE, OF COURSE

Sign of a good employee . . .

The desk? Yes, in a way, but more than that . . . the whole attractive office arrangement shows a management that believes in the best working atmosphere and the finest office equipment. A management like that just naturally attracts the best personnel. They have chosen CRESTLINE Steel Office Desks and Files because CRESTLINE perfectly combines the most modern efficiency with rare good looks. You, too, will find CRESTLINE by Security Steel a good investment (quite modest, too) in the best personnel.

A card or letter will bring you the name of your nearest Security CRESTLINE Dealer . . . no obligation, of course.

Crestline
by SECURITY STEEL EQUIPMENT CORPORATION
AVENEL, NEW JERSEY

Created by
SECURITY STEEL EQUIPMENT CORP., AVENEL, NEW JERSEY

(*Continued from page* 195)

been repaired locally, or if irreparable, has been subject to salvage either through sale or re-use of parts. Many items, with possibilities of usability after extensive repair, have been shipped to the Quartermaster Corp's reclamation center at the Jeffersonville (Indiana) QM Depot, which subsequently reissues them as usable. In the case of office machinery, such as typewriters and electrically-operated equipment, a continuing program of cleaning, repairing, and overhauling has effected a high degree of maintenance and increased life-expectancy.

In the use of expendable supplies, such as stationery, pencils, and others, said Colonel Thompson, many economies have been instituted. Standard items of constant use by the armed forces are substituted, where practical, for non-standard items, and, in some instances, scrap or waste is converted for re-use. For example, obsolete forms and scrap paper from the installation's printing operations have been converted into scratch pads, instead of purchasing new pads from commercial sources.

The installation has initiated a system of designation of supply representatives from its operating activities who supervise and are responsible for supplies issued. These representatives see to it that supplies are handled in the most economical and efficient manner.

By means of an active cost consciousness program, pointing out the price of materials in constant use, the installation's personnel are made aware of the importance of supply conservation, and the financial savings to be achieved through individual effort and resourcefulness.

* * *

## AUTOMATIC PHOTO COPY MACHINE MAKES DRY PHOTO COPIES

The accompanying illustration shows a compact, motor driven, continuous printer and processing machine tradenamed the Exact-Phote-Copy, which eliminates the necessity for a separate printer, eliminates washing, fixing, drying, and the need for a darkroom. The unit will copy anything that is typed, written, printed or drawn. After electric switch is turned on, the operator inserts with a sheet of negative paper, the material that is to be copied. The two sheets come out of the machine in about eight seconds. The sheets are separated, and the negative with sheet of transfer paper is inserted in the machine. The copy is processed in about ten seconds, copy and negative being peeled apart after another wait of ten seconds. The machine is made by the General Photo Products Co., Chatham, N. J.

* * *

## MAGNETIC INDEX CARDS SEPARATE AUTOMATICALLY

Magne-Dex is the name of a new magnetic visible card file manufactured by Business Efficiency Aids, 7916 Lincoln Ave., Skokie, Ill., wherein upon removal index divider cards, the individual cards which are magnetized to repel each other by a permanent magnet built into tray or drawer, fan out, materially simplifying the selection or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LEADS & HOLDERS

**2200 Koh-I-Noor Graphite Leads**
**17 Degrees of Accurate Grading**
Recognized by Draftsmen the World Over for Dependable Service
Packed Six of a Degree in a Protective box
**Smoothness, Strength, Uniformity combined with long lasting qualities**

AND NOW

**2200 KOH-I-NOOR FLEXICOLOR LEADS**

*"The Lead That is Really Flexible"*
UNSURPASSED BREAKING STRENGTH
SEVEN COLORS AND COMBINATION OF RED AND BLUE — RED AND YELLOW

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All the above leads for use in 1504, 1511, 5611 or 5612 Holders

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Title .....

Company .....

Address .....

checking of a particular card. The Magne-Dex is compact, requiring no more space than the conventional vertical card file. It is available in all card sizes from 6″ x 4″ up to

Upon removal of dividers, cards in that group fan out for easy reference.

10″ x 10″, and can be had in installations from 500 to 10,000 card units in tub desk, record desk or tray styles. The cards may be used in typewriters or other office machines without affecting their magnetic qualities. Printed matter giving more information about the Magne-Dex system is available from the manufacturer.

### ALL PURPOSE FILING STOOL

New all steel filing stool with Masonite seat is being offered by Maso Steel Products, 81 W. Van Buren st., Chicago, Ill. Known as the 300, the stool has a 14″ seat of tempered Masonite perforated for cooler comfort and seating satisfaction. Metal edges are rolled under to prevent damage to hosiery and

clothing. The curved legs are of ⅞″ tubing, and the footring and legs are welded for greater strength and durability. The stool is available with metal parts finished either in office green or gray. Height to top of seat is 14″, and the foot spread is 16¼″.


plenty sharp boss!

His employees say he's "APSCO Sharp," because he has conveniently located plenty of APSCO Sharpeners throughout the office. He knows APSCO Sharpeners not only increase "efficiency time" but sharp points insure faster, neater work.

The Dexter Model #3 is ideal for heavy duty office use. It features an all steel frame with a selector type dial. It sharpens all size wood case pencils and the APSCO exclusive positive point stop guarantees a perfect point everytime.

There's an APSCO Sharpener for every pencil sharpening need. Look for the APSCO Trade Mark, it's your assurance of quality.

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# AMONG THE Associations

## District 3 Conference at Kansas City Draws 200 With Outstanding Program

Kansas City buyers were hosts to the third Purchasing Conference of District 3, N.A.P.A., September 22 and 23. Some two hundred members of the District Associations were in attendance at the various sessions, including the official delegates to the District Council meeting, which took place on the following day. A high calibre program was arranged by the conference committee, blending the practical aspects of commodity markets and buying policies, basic principles of purchasing and professional progress, the goals and means of Association activities, and the broader economic and political outlook on both the informative and inspirational plane. Conference sessions were held at the Hotel Muehlebach.

Conference Chairman W. K. Reed called the meeting to order on Monday morning, and the delegates were welcomed by L. E. Hathaway, President of the Kansas City Association, Mayor William E. Kemp, and A. W. Soelle of St. Louis, National Vice President for District 3.

Arch R. Maulsby, sales training specialist, addressed the conference on the theme, "The Purchasing Agent and the Salesman See Eye to Eye." As the basis for his remarks, he traced the recent history of governmental spending, taxation, and the national debt, graphically illustrating the present situation by means of a sectional chart which emphasized the stratospheric proportions of the current burdens on productivity and earning power. The resulting squeeze on business activities and profits presents a challenge calling for new efficiency and cooperation on the part of both selling and purchasing personnel to maintain our high living standards and national leadership.

National President H. W. Christensen of N.A.P.A., in a thoughtful address entitled "What Are We Actually?" quoted representative leaders of industry to show the high importance that is attached to purchasing in modern concepts of management, and what managment expects of its purchasing men in meeting this responsibility He pointed out that success and progress in purchasing depends on the clear recognition, by purchasing men, of the opportunities and obligations that are inherent in the purchasing position, and on their willingness and capacity to live up to what is expected of them. This course is exemplified in the aims of the Association and in the many facilities that it has placed at the service of its members. Accomplishment of the objectives, however, calls for searching self-analysis by the individual buying executive and the determination to keep pace. The profession of purchasing is making great and steady strides, opening new and greater opportunities for those of its members who are alert to participate in this advance, but leaving by the wayside those who fail to grasp the significance of the role that purchasing plays in today's business planning and administration.

T. A. Corcoran of Louisville, Past President of N.A.P.A., discussed "New Horizons for Purchasing". He stressed the importance of informed, practical imagination in approaching purchasing problems, going back to the fundamental requirements and finding the best solutions, always bearing in mind the ultimate objectives of product improvement, cost reduction, efficient and profitable company operation. He cited a number of examples from the experience of his own company, involving such diverse factors as plant layout, materials handling, and standardization, in addition to the conventionl purchasing factors of materials and sources of supply.

(*Please turn to page* 222)

**These are the speakers at the District 3 Conference: seated, l. to r., Harold K. Howe, Washington; H. W. Christensen, San Francisco; Stuart F. Heinritz, New York; and T. A. Corcoran, Louisville. Standing, A. R. Stock, Kansas City; Keith P. Rindfleisch, Chicago; John H. Reese, Dallas; and Wallace B. Burnet, Chicago.**

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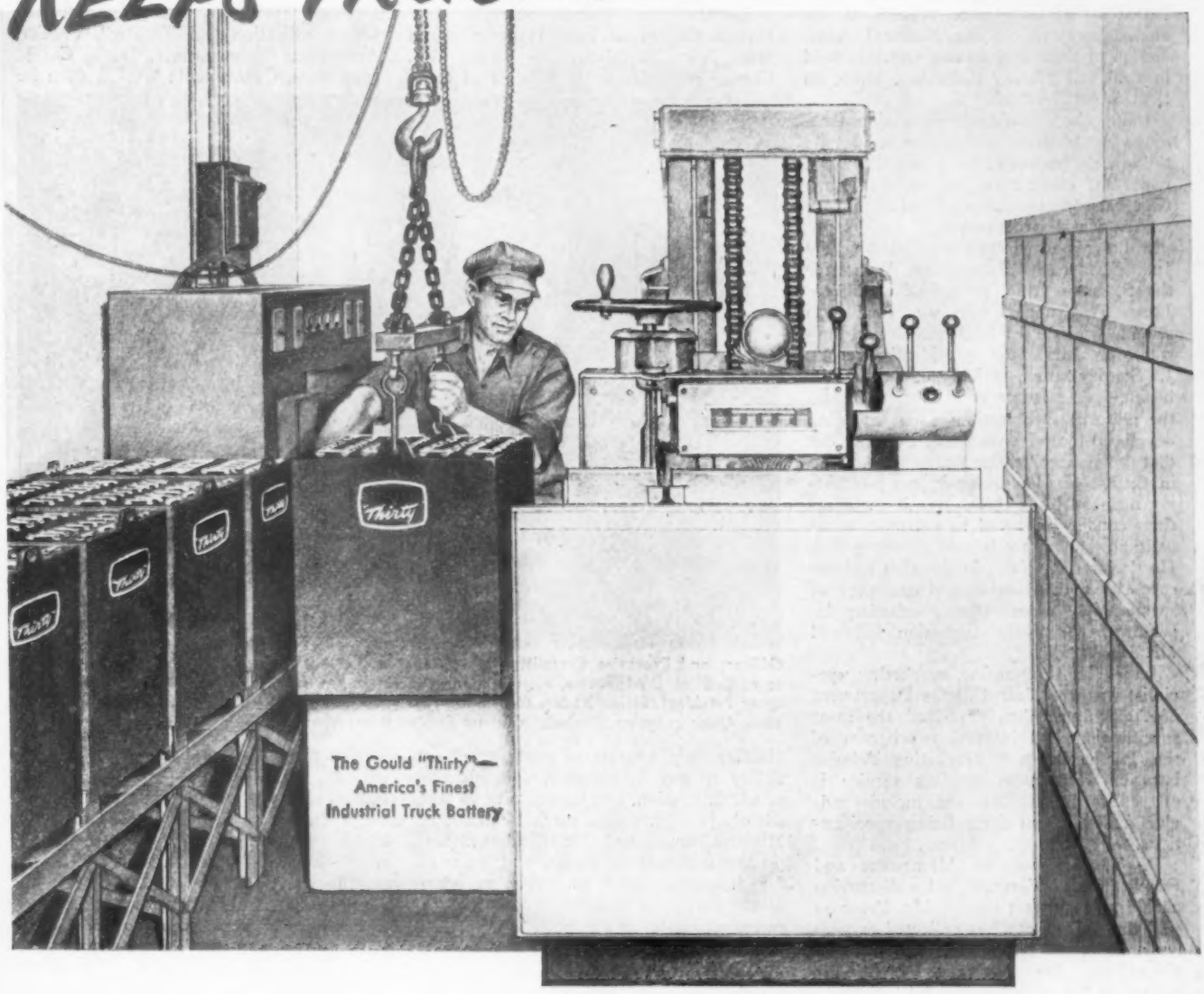


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# Twenty-Nine States Represented At Purchasing Officials' Meeting

Purchasing officials of twenty-nine states, representing buying power estimated in billions, were present at the annual meeting of The National Association of State Purchasing Officials, held in the Neil House, Columbus, Ohio, on September 29-October 2.

Using the round-table discussion technique with great effectiveness, despite the large attendance, the group developed important information and opinions on a wide variety of problems faced in modern governmental procurement.

Following a welcome to Columbus by John W. Bush, Purchasing Agent for the State of Ohio, on behalf of Mayor James A. Rhodes, who was unable to attend, William E. Stevenson, of Minnesota, presented the president's report. J. Stanley Bien, Michigan, began the business discussions with a brief talk on the uniform specifications program being developed by the association. Pointing out that good specifications are not an end in themselves, he declared that purchasing men must ask themselves if specifications can be improved to get more competition, better goods and lower prices. He declared his faith in the plan to have cooperative distribution and exchange of specifications among state purchasing departments. A lively discussion followed Mr. Bien's talk.

James N. Constantine, marketing specialist with the United States Department of Agriculture then described the meat specification and inspection program of the Production and Marketing Administration. The meat grading service is offered to institutions, and includes advice and help on formulating specifications.

P. T. Peterson of Minnesota, and Frank Free of Vermont, led a discussion on bid and contract surety. Mr. Peterson said that Minnesota has collected enough on contract security to warrant its continued use. He said that he did not believe in bid security, but did believe in performance bonds. He said they had helped during the confusion following the outbreak of war in Korea.

Mr. Free declared that surety helps to eliminate risk. He said that there is no such thing as absolute certainty in business ventures, and surety tends to reduce hazards and screen out incompetent bidders. He pointed out that surety is no reflection on the integrity of a vendor but is only a reasonable protection against many kinds of risks. "A necessary evil", Mr. Free called surety requirements. In the discussion following, Maj. George Cronin of Massachusetts said that the main thing to consider in such situations was the reliability of the vendor rather than the amount of money he can put up, since many speculators have a lot of money to advance. Carl Anderson of Pennsylvania declared that "until state governments recognize that a P.A.'s yes means yes, and his no means no, you won't get anywhere" in curbing contract failures.

Discussion leaders for the first subject on Monday afternoon's program, "Time Schedules for Requisitioning," were Harold Cheney of New Hampshire and Miss Alice E. Miller, of Texas. Mr. Cheney pointed out the benefits of coordinating requirements of using agencies: ability to buy in quantity, simplification of administration, and opportunity to take advantage of favorable market conditions. Miss Miller described the time requisitioning program in Texas, and some of the difficulties faced in trying to coordinate purchases because of the size and varied climates of the state.

Major Cronin of Massachusetts opened Tuesday's program with a discussion of developments on the price front. All signs, and opinions of the forecasters, he said, point to a moderate price rise during next year, but no runaway. He said he expects coal prices to rise, under pressure from the new wage agreements, and fuel oil prices to advance proportionately.

James Batterson, Deputy Director of Administration, New York State Civil Defense Commission, and Edgar G. Luby of New York, lead a discussion on "Trends in Civil Defense."

Discussions listed for the Wednesday, October 1 program, included the following: "Inspection and Testing", F. Carl Anderson, Pennsylvania, and C. L. Magnuson, Connecticut; "A Program for Exchanging Information and Experiences," Franklyn A. Adams, Rhode Island, and Roy W. Remington, Oregon.

On Thursday, October 2, Major Cronin gave a report of the committee to review purchasing procedures in the State of Illinois.

The following officers and executive committee of the association were unanimously elected for the coming year:

President, Blaine Yoder, Nebraska; vice-president, John W. Bush, Ohio; J. Stanley Bien, Michigan; George J. Cronin, Massachusetts; Dan W. D'Alemberte, Florida; H. F. Scott, New Mexico; and William E. Stevenson, Minnesota.

**Officers and Executive Committee of National Association of State Purchasing Officials: l. to r., Dan W. D'Alemberte, Florida; George J. Cronin, Massachusetts; J. Stanley Bien, Michigan; President Blaine Yoder, Nebraska; H. F. Scott, New Mexico; Vice President John W. Bush, Ohio; outgoing President William E. Stevenson, Minnesota.**

## PITTSBURGH ASSOCIATION HAS PROGRAM ON MACHINE TOOLS

A complete program on machine tools featured the October 21 meeting of the Purchasing Agents Association of Pittsburgh, held in the Hotel William Penn. Purpose of the program was to explain the basic actions of machine tools, to describe functions of the machine tools, and to stimulate discussion of the problem of buying this type of equipment.

A color motion picture entitled "Turret Lathes—Their Operation and Use" was included in the program. Speaker of the evening was Robert H. Presnell, Pittsburgh district manager, Gisholt Machine Company.

A factory visitation was held prior to the meeting at the Westinghouse Electric Corp.'s East Pittsburg Works. Luncheon was served in the plant dining room.

## "ROMANCE OF PETROLEUM" TOPIC AT DALLAS ASSN.

Two meetings of the Purchasing Agents Association of Dallas were held during October, at the Melrose Hotel.

On October 9, Earl A. Brown, vice-president, director and general counsel of the Magnolia Petroleum Company, was guest speaker. Mr. Brown's topic was "The Romance of Petroleum."

Dr. Arthur A. Smith, vice-president, First National Bank in Dallas, spoke at the October 22 meeting on "The Current Economic Outlook."

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# Largest Intermountain Conference Held at San Francisco, September 26

Two new buyer groups made their initial bows at the Seventh Pacific Intermountain Purchasing Agents' Conference in the St. Francis Hotel, San Francisco, September 26 and 27. Meeting in two separate panels on the second day of the conference, the groups included, respectively, purchasers of equipment for the electronics industry and buyers of general office equipment and supplies.

The electronics industry is "the fastest growing in the nation," according to O. B. Sundberg, chairman of the electronics buyers panel, and purchasing agent for the Hewlett-Packard Company of Palo Alto, California. No attempt has been made as yet to organize information on the many phases of purchasing in the electronics industry. He suggested that

**Charles Keeble, a past president of the L. A. Assn., George Renard, E. G. Chambers.**

members of the panel might be called upon to aid in the organization of a nationwide electronic buyers group to disseminate information to purchasing men in that field.

The second "first" grew out of a panel discussion entitled "Banking and Insurance." This title is too limited, believes E. C. Rutherford, chairman of the panel and P. A. for the California-Western States Life Insurance Company of Sacramento. The needs of banking and insurance buyers are essentially the same as purchasers of general office equipment in other businesses, and such a buyers' group with a broader title should be organized to include them, he feels.

These two panel sessions were highlights of a day and a half of meetings which included seven other buyer group discussions, three general sessions, and a luncheon meeting addressed by George A. Renard, executive secretary-treasurer of the National Association of Purchasing Agents. Almost 400 members and their wives registered for the convention sponsored by the purchasing agents associations of Northern California, of Los Angeles, and of Utah, the largest West of the Rockies meeting ever held.

The conference opened with a general session on the future outlook of ferrous and non-ferrous metals. Aluminum offers the greatest promise to American industry of all metals for the future, believes Angus V. McLeod of the Kaiser Aluminum and Chemical Company, Oakland.

As initial speaker, Mr. McLeod described the rapid growth of the aluminum industry during the past decade—an increase of over 400 per cent in national production since 1940—which has made the metal second only to steel in availability. The United States has an ultimate production capacity of a million and a half tons of aluminum per year, he estimated, with the 1952 total expected to pass a million.

Aluminum is valuable as a substitute for many other metals which may be threatened by short supply, Mr. McLeod said, and the general trend is toward expansion. Although currently there is a tight supply of the metal on account of several factors, the industry looks toward a favorable production balance by the middle of 1953.

Titanium is also a coming metal, Mr. McLeod predicted. Difficulties of producing the metal from the basic titanium bearing ores of ilmenite, rutile, and leucozone have kept production down to only 3½ tons a day per factory, and prices much too high to permit the metal becoming commercially feasible. Prices now range between $5 and $20 per pound.

W. C. Allen of the Utah Power and Light Company, Salt Lake City, chairman of the session, gave credit to the "know-how of American industry" and predicted that means would be developed to make titanium available at reasonable prices "sooner than you think."

The future of copper and lead is not as bright, according to Gordon O. Rich-

**W. S. Floyd, General Conference Chairman.**

ards, Graybar Electric Company, Salt Lake. He looks gloomily toward an 800,000 ton production drop within the next 10 to 15 years because the higher bearing ore deposits are becoming exhausted, and the industry is now using lower bearing ores.

"From the greatest exporter of copper in 1900 we have become the greatest importing nation in 1952," he said. "We must increase our copper imports at least by half a million tons by about 1965."

The United States must look forward toward the development of copper ore mines in such countries as Peru, Northern Rhodesia, and the Belgian Congo, and tariffs should be kept off copper to encourage foreign production.

The lead and zinc situations are similar, he said. Instead of decreasing, production may rise during the coming several years but not as much as the increase in demand—only about one-half in the case of lead. Here again we must look toward other countries.

(*Please turn to page* 204)

**Members of the Oil Forum: H. F. Stanley, Roy M. Fly, and Kenneth W. Yeates of Phillips Petroleum, Salt Lake.**

**Remarks at the Containers Forum draw varied reactions from W. B. Van Horn, G. B. Mirus, Walter Dorwaldt, and M. W. Giboney.**

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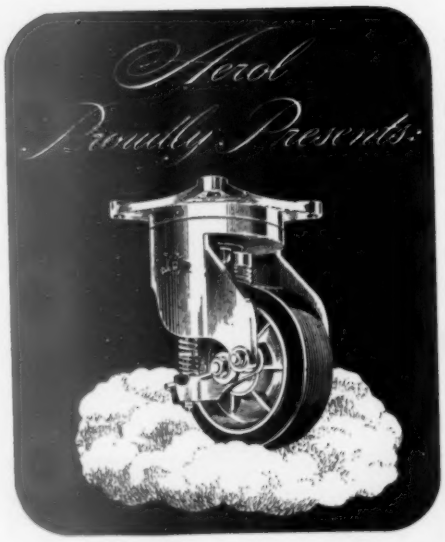


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At last, here is a shock-absorbing wheel and caster that *actually* provides MAXIMUM shock absorption under any condition—even when truck or dolly is completely empty.

Aerol's new controlled knee-action unit is a completely trouble-free combination of light and heavy commercial standard springs. They will never unwind, fatigue or pop. Undue wear or breakage caused by "gyrating casters" is completely eliminated by the light spring which takes the stress when truck is empty or near empty—the heavy spring is for maximum or near maximum loads. Both springs can easily be replaced to convert unit to a different load capacity.

Available in the following sizes: 6"-8"-10" standard duty—10" x 12" heavy duty and 10"-12" dual wheels. Aerol-sealed and "lubricated for life"!

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(*Continued from page* 202)

"We are dependent on an increase of 40 per cent in imports of lead, he said, and much of this could come from Australia. Removal of tariffs would help to encourage development of foreign manufacture so important to our industry.

George W. Aljian addressing the closing session of the conference.

Industry must also face possible steel shortages through 1953, believes E. R. Davis of the Sierra Drawn Steel Corporation, Los Angeles. Addressing the general session on the subject of iron and steel, he said that the demands of the military are so great, taking about 40 per cent of the current national production, that private industry "must use utmost ingenuity" to get along with what is available to it. Facilities for producing

Oregonians at the conference included M. L. Simmons, W. W. McCulloch, and C. E. Anderson.

hot topped ingots, the basic raw material used in steel production, are limited. Manufacturers dependent on steel may look toward two influences affecting supply conditions during the coming year, each working in opposition to the other; an increase in the number of steel producing plant to increase supply, but a "balooning" of military demands to absorb a good portion of that increase.

Following the series of afternoon panels, the purchasing agents met in a second general session to hear a discussion of standards and standardization. Addressed by four of their colleagues, in

(*Please turn to page* 208)


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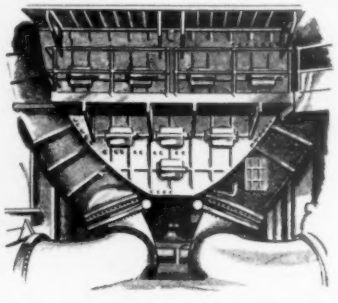
Akron, Baltimore, Battle Creek, Mich., Bloomington, Ill., Buffalo, Chicago, Cincinnati, Cleveland, Columbus, Denver, Detroit, Fairfield, Conn., Findlay, Ohio, Gloucester City, N. J., Greensboro, N. C., Hoboken, Indianapolis, Jamestown, N. Y., Kansas City, Lenoir, N. C., Minneapolis, Omaha, Plymouth, Ind., Reading, Pa., Richmond, Va., Roanoke, Va., Rochester, Sandusky, Ohio, Shrewsbury, Mass., St. Louis, Toledo, Watertown, Mass.

# BUSINESS IN MOTION

*To our Colleagues in American Business ...*

Everyone who has to deal with water and steam is concerned with the reduction of corrosion. Power plants, for example, spend large sums annually to treat boiler feed water, and condenser operation is watched carefully. Because of this, the Revere Research Department over a long period of years has studied intensively the causes of corrosion, and how corrosion can be reduced, as it usually can.

Recently the Revere Research Department was asked to investigate the failure of Admiralty metal tubes after some five years of use in a condenser. The user felt such tubes should last longer under average conditions. Samples from failed tubes were sent to the laboratory, and subjected to physical, metallurgical, chemical and microscopic tests. It was found that the outer surfaces were pitted, thinned, grooved and cracked. In some places corrosion had completely destroyed the tube wall. Inside, there was but little pitting of the underlying metal. Thus, it was evident that the destructive process took place on the outside, or steam side of the tube.



The chemical analysis of the outside scale was evidence that the excessive corrosion was due to carbon dioxide and other non-condensable gases carried along with the steam. It is not unusual to have these and other corrodents present in damaging amounts in the air-ejector system, whereas they are not injurious elsewhere.

Photomicrographs were then taken of sections through the cracks. It was found that the cracks originated in corrosion pits on the outside of the tube, and progressed inward. In doing so they broke across the grains of the metal rather than following the grain boundaries. This transgranular pattern showed that the pits created stress-concentration points of weakness. Other characteristics of the microstructure confirmed that failure was due to a combination of corrosion and fatigue. The conclusion was, of course, that not only were there corrodents in the steam, but that in addition the tubes were subject to vibration.

Given these facts, the remedies were not difficult. The copper-base tube alloy that generally possesses the greatest resistance to the non-condensable gases responsible for such corrosion is 5% aluminum bronze. This is somewhat more expensive per pound than Admiralty metal, but in this case when balanced against the expected extension of life, the ultimate cost became favorable. It was also recommended that steps be taken to reduce tube vibration materially by installing a baffle in the steam inlet. Finally, it was pointed out that many operators find it good practice to discharge the after-condenser drain to the sewer, instead of returning it to the system, thus substantially reducing the amount of carbon dioxide, ammonia and other corrodents in the system.

This report provides a typical example of the thoroughness with which the Revere Research Department attacks the problems that are brought to it. If you have questions concerning the selection, fabrication, or service of Revere Metals, get in touch with the nearest Revere Sales Office, through which the experience of our Technical Advisors, and if necessary, of Research, can be made available to you. And do not forget that other suppliers to industries of all kinds also operate laboratories upon whose knowledge you can call. It will pay you to do so.

**REVERE COPPER AND BRASS INCORPORATED**

*Founded by Paul Revere in 1801*

*Executive Offices:* 230 Park Avenue, New York 17, N. Y.

SEE REVERE'S "MEET THE PRESS" ON NBC TELEVISION EVERY SUNDAY


(*Continued from page* 204)

addition to chairman E. H. Weaver of the Union Oil Company, Los Angeles, the convention delegates were regaled with account after account of how the setting up of standards and standarization procedures has saved money.

George A. Cumming of the purchasing department of the State of California, reported that his agency buys 5,000 pairs of work shoes each quarter of the year. By standardizing these purchases the State got a better wearing shoe at lower cost. Taxpayers also were saved about 20 per cent on purchases of penicillin through standardization.

**George A. Cumming, "Buck" Weaver, and Raymond C. Zell spoke on standardization.**

He reported that individual departments of the state government had practiced standardization for a number of years, and that since June of this year a board has been organized to determine overall standards and standardization practices for all departments. Top governmental personnel are meeting regularly to collect and analyze buying information.

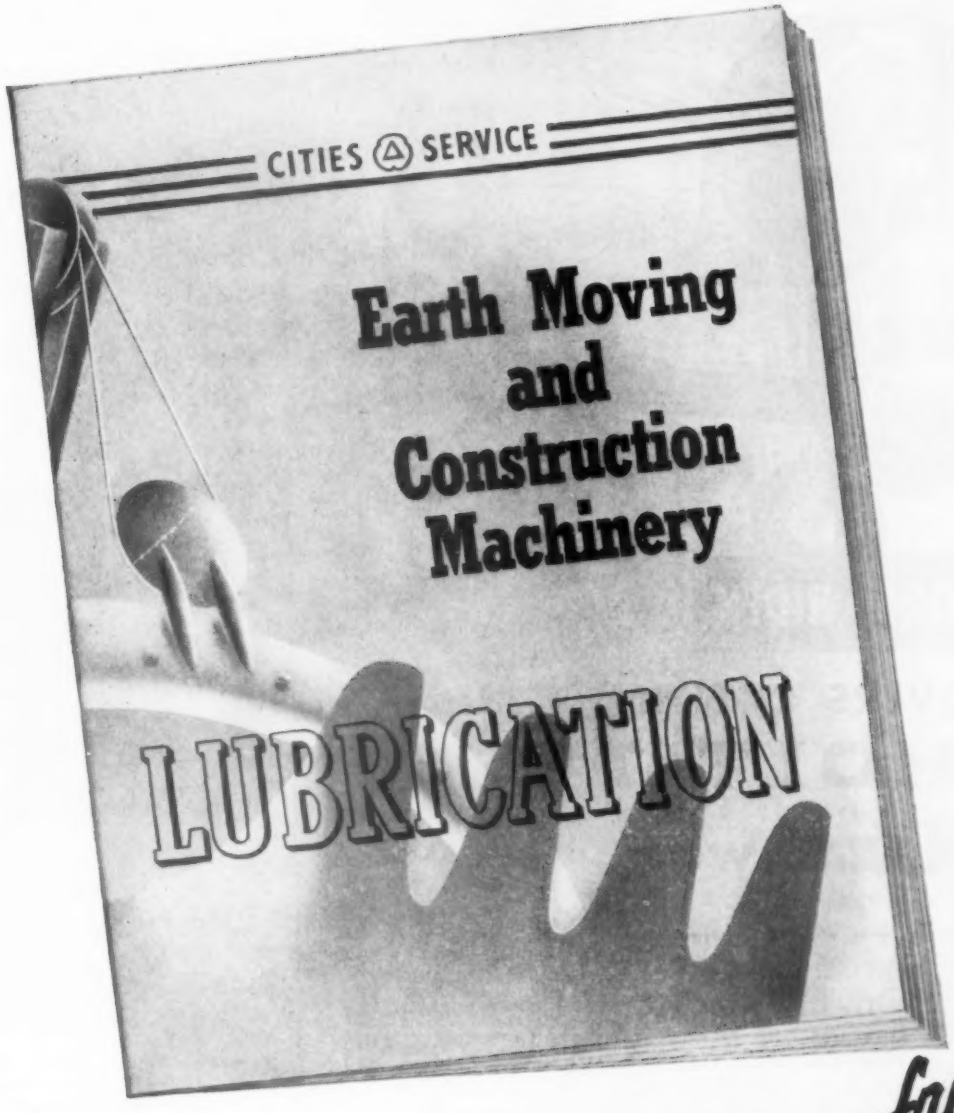
Robert W. Moore of the Eimco Corporation in Salt Lake City reported that standarization reduced the number of types of nuts used by his company from about 127 to 41, and the number of different types of bolts by more than half. Through greater quantity buying of fewer units of these items his company is saving money. The success of this sample study is being applied to other materials bought by Eimco.

Geoffrey Haszard of the British Columbia Electric Company, Vancouver, found that through a sample standardization of janitorial supplies the company saved $6,200 in annual purchases previously totaling $23,000 per year—more than 25 per cent saving. Results were so encouraging that the utility company is at present preparing to employ a full time "specification engineer" to assist the P. A. in standardizing all purchases.

Raymond C. Zell of the Union Oil Company, Los Angeles, advised his colleagues to keep an active and continuing interest in the field because of periodic improvements in products offered for sale to industry.

"Standards and standardization, used as a production tool, pays dividends," he said.

(*Please turn to* page 210)

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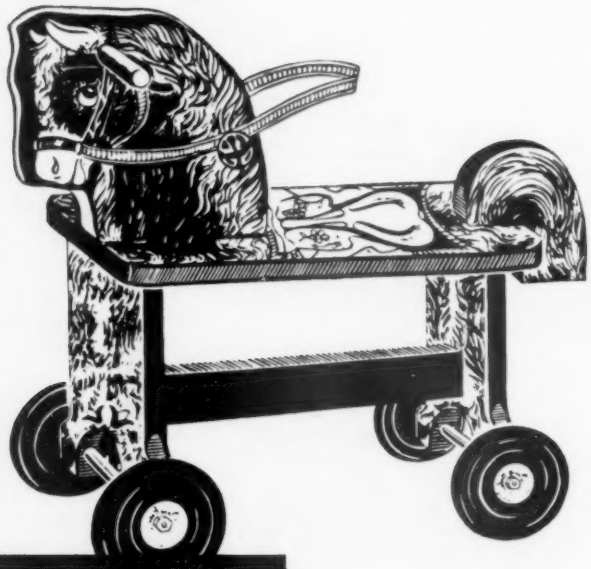

#301 HORSE RIDER

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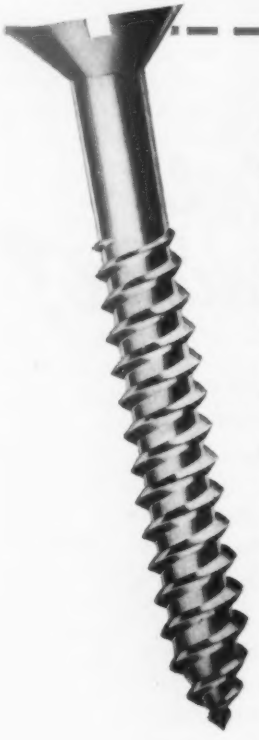

The Gong Bell Mfg. Co. has been making quality toys and bells in East Hampton, Connecticut, since 1866. One of the most popular items in the Gong Bell line is the #301 Horse Rider.

But, until recently when Gong Bell "discovered" Continental's new Holtite "TWINfast" Wood Screws, assembly was slow and painstaking. Since then costly assembly time has been slashed, the assembled unit substantially strengthened and the toy lasts longer. Now even the roughest young Hop-A-Long Cassidy enjoys a smoother ride because Holtite "TWINfast" Screws are doing a better job of holding the unit together.

Time savings and improved product quality like this are typical of Continental screw fasteners and screw fastening methods. By examining your own problems in production fastening and presenting them to us, we may be able to help you more than you think. Why not get in touch with us now? Continental Screw Company, New Bedford, Mass. Remember,

*—You can count on Continental®*

HOLTITE *Engineered* FASTENINGS

CONTINENTAL SCREW COMPANY INC. ★ 1904 ★ TRADE MARK


(*Continued from page* 208)

Discussion chairman Weaver expressed the fear that P. A.'s are frightened by the lugubrious term and suggested the more attractive title of "waste elimination in industry". That is the result of standardization, he said, and the objective of the Committee on Standardization of the N. A. P. A., of which Mr. Weaver is chairman.

Possibly the heart of the conference consisted of the nine panels related to specific industries. Here is a brief summary of the major points discussed in each of these buyer sessions.

*Electronics*: This first meeting of an electronics buyers group included talks by two men representing British Columbia, Geoffrey Haszard and Jack Fox.

**J. P. Hopkinson of Salt Lake City, about to enter one of the sessions.**

Both men explained that while the electronics industry in Canada was not as highly developed as in the United States, it was becoming more and more important. Electric power companies and in some cases the plywood industry are using electronic equipment.

John Stenson of Eitel-McCullough, Inc., San Bruno, Calif., predicted that the vacuum tube industry would expand during the next few years as new uses will be developed for the tubes where they are not practicable at present. California and the West Coast generally are more progressive in this field than is the East.

*Aircraft*: The problems of aircraft purchasing appear to center on sub-contractual buying, believe members of the aircraft panel S. H. Bellue, Hughes Aircraft Company, Culver City; Gordon Wood, United Air Lines, Inc., South San Francisco; and E. A. Grindle, Hiller Helicopters, Palo Alto. In sub-contractual buying the first step to be taken to aid the purchaser is to insure the maintenance of quality material. This step is necessary since it is impossible to control manufacture of each part other than to insure the use of quality material on the manufactured item. The best way to check the quality, the panel agreed, is for the P. A. to inspect personally the plant of the sub-contractor.

Where a manufacturer deals with a small plant, it is also wise for him to see that this plant is not using his sub-contractor's order as an "overhead" job.

(*Please turn to page* 212)

# "Easiest fuse to renew I ever used. It's G-E"

*"Only three pieces to handle—plus the link—when I renew blown links in this new General Electric time-delay fuse. It's a well-made, sturdy fuse, too. I like the ribs on the cap—they give a better grip than knurling. You can tell at a glance which end comes off."*

## You'll like these other features of G-E fuses too

**General Electric makes them all**

**One-time fuses:** All standard ratings from 3 to 600 amp. Available for both 250V and 600V service.

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**Plug fuses:** Transparent-top plug fuses. 3 to 30 amp, 125V.

**All G-E fuses are listed by Underwriters Laboratories, Inc.**

**1.** All contact surfaces on renewable fuses are silver-plated to eliminate heat caused by oxidation.

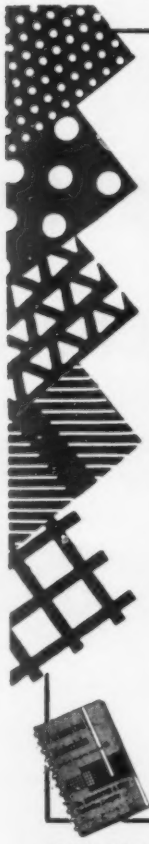
**2.** Newly designed links give accurate and consistent time-delay.

**3.** The simple three-piece construction applies to ferrule type fuses, too. This fuse has a patented hinged contact plate—no washers to drop.

For complete data, address Section D41-1170, Construction Materials Division, General Electric Company, Bridgeport 2, Conn.

*You can put your confidence in—*

**GENERAL ELECTRIC**



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**— for cleaning, grading, straining and filtering . . . guarding and ventilating . . . acoustical treatment . . . ornamental enclosure, and related problems of product and machine design.**

You have a wide selection of patterns to choose from, all accurately perforated. For commercial processing, perforations may be had with as close as ± .0005". Materials include practically all metals and sheet materials such as plastics, fabrikoids, plywood, etc. Ornamental grilles may still be furnished in steel with painted finishes.

Perforated sheets may be furnished rolled, formed, sheared, welded, brazed or otherwise fabricated to your specifications.

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Catalog No. 62 tells the "hole" story —write for it!

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Yes—with friendship and esteem, for a long time, if you place your name and business on a Gits Quality Plastic Product. The cost is small—the value high. You have a wide selection of items to choose from, ranging from $3.00 per 1,000 to $10.00 per item.

ASK your specialty jobber to show you the complete line of Gits Quality Plastic Products, or write direct, using coupon below.

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Gentlemen:

☐ Please send me at once sample of the item I have checked below and prices in ..... quantity.
☐ Plain ☐ With imprint

☐ "Plastic Eye" Flashlight
☐ "Plastic Eye Jr." Flashlight
☐ "Super Right Angle" Flashlight
☐ "One-Hand" Knife
☐ Razor-Nife and Key Chain
☐ Letter Opener
☐ Nail File
☐ Thimble
☐ Stir Stix
☐ Bracelet Key Holder
☐ Shoe Horn
☐ Key Tag
☐ Match Pac
☐ Par-Kit

☐ The items you illustrate do not fully satisfy my needs, so please send me your complete catalog and full information.

(PLEASE PRINT)
NAME ..... TITLE .....
COMPANY .....
ADDRESS .....
CITY ..... ZONE ..... STATE .....


(*Continued from page* 210)

taking in other short-term orders with the idea of using the long-term item as a fill-in between the higher paying short termers. In dealing with small plants the usual lead time is 30 days, but in some cases Western manufacturers are granting 60 days, depending on the particular assignment.

*Insurance and Banking*: Quality and inventory control were the principal subjects of this panel. Ken Greig of the American Trust Company, San Francisco, explained the perpetual inventory system used by his company which has the advantage of maintaining accurate records of supplies at the various branch banks, and assisting in preparing for future orders. The company also includes in its inventories a record of supplies at the warehouse of the vendor as this knowledge reduces the need for maintaining extra supplies in the bank's own warehouses, and effecting a substantial cost saving.

**Angus V. McLeod, W. C. Allen, Gordon O. Richards, and E. R. Davis made up the ferrous and non-ferrous metals panel.**

*Distributors and Jobbers*: Timing of orders and getting merchandise on the shelves is the key to proper inventory control for the middleman, according to J. R. Hairgrove of the Braun Corporation, Los Angeles. An accurate perpetual inventory system is essential for high turn over, and the lowest possible investment. Inventory must be increased or decreased to keep up with changing needs, and new items must be added from time to time in accordance with industry developments.

There must be a close relationship between the distributor and factory management as the former "extends the factory program", said E. M. Laine of Shields Harper and Company, San Francisco. There must be "no compromise with sound buying policies at any time."

*Governmental, Educational, and Institutional*: Representatives of both the Federal and the California State governments could benefit from the experiences of one another by "looking over each other's shoulders."

"We have the responsibility in tax supported agencies to get closer together on matters of uniform specifications and standardization," said Harlan C. Maaske of the Federal Supply Service, San Francisco. He reported that his office stocks

(*Please turn to page* 216)

*Specify*

# PEERLESS HIGH SPEED EXPANSION REAMERS

## ...For
- ECONOMY
- LONG LIFE
- BETTER FINISH
- GREATER ACCURACY

**When the reamer becomes dull, it may be put back into its original serviceable condition not once, but many times, by expanding and resharpening.**

*Telephone Your Industrial Supply Distributor*

**THE CLEVELAND TWIST DRILL CO.**
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DISTRIBUTORS EVERYWHERE
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# Your PROBLEM IS Our JOB

Working with a wide variety of band and power hack saw machines, Milford Specialists continually test MILFORD Blades under both normal and severe break-down conditions. The carefully tabulated results contribute substantially to the development of MILFORD Blades that give you maximum performance in the type of metal you cut. MILFORD Specialists make your metal cutting problems theirs. If necessary, special tests are conducted on your material to make sure you get maximum production at the lowest cost.

*STANDARD OF QUALITY THE WORLD OVER*

**THE HENRY G. THOMPSON & SON CO.**

*SAW BLADE SPECIALISTS FOR OVER 75 YEARS*

NEW HAVEN 5, CONNECTICUT

PROFILE AND BAND SAW BLADES,
HAND AND POWER HACK SAW BLADES


(*Continued from page 212*)

a complete file of specifications for some 30,000 items bought by the government each year, and these specs are available to suppliers without charge.

*Legal Phrasing of Purchase Order Forms*: This panel was probably the most heavily attended of the nine. Buyers were admonished by several speakers to know and to understand the terms of the purchase contracts, and the respective liabilities of purchaser and vendor. Gordon B. Affleck of the Church of Jesus Christ of Latter Day Saints, Salt Lake City, suggested that the contract should consist only of "a few well chosen, clearly stated, understandable terms".

**Chemicals and paints were discussed by W. G. Owen, Gerald A. Selby, and John G. Trager (standing).**

He referred the P. A.'s to the terms and conditions of contracts as suggested by Stuart Heinritz in his book *Purchasing Principles and Applications*. The purchaser can effect considerable savings for his company through properly worded contracts regarding discounts, taxes, and compliance with Federal regulations, he said Mr. Heinritz had written.

Arthur Melka of the Hydraulic Dredging Company, Ltd., Oakland, discussed the advantages of commercial arbitration to settle disputes arising from contracts. It is a fast and relatively inexpensive way of settling disputes without subjecting the companies involved either to long and tedious court trials or to considerable undesirable publicity. The decision of the arbiters is binding, and a simple statement in the contract is sufficient and necessary to cause any disagreements to be referred to an arbiter.

*Containers*: Fabric containers will more and more replace metal and wood, believe members of this panel, chaired by Walter Dorwaldt of the Golden State Company, Ltd., San Francisco. Inventories are low at the present time, and the market is good for all types of containers. Only about half as much tin is used in cans now as was needed ten years ago.

*Chemicals, Paints, and Allied Lines*: Synthetic paints, though they may look better and last longer than oil base paints, represent serious repainting difficulties, said William Bowman of the Los Angeles Chemical Company. Instead of

(*Please turn to page 220*)

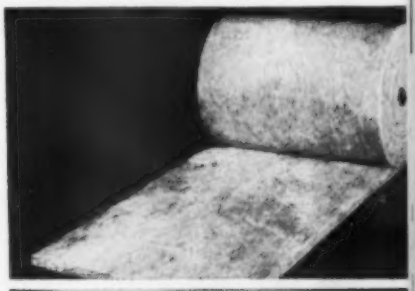
# Highlights

## OF THIS NEWEST FIBER GLASS OPERATION

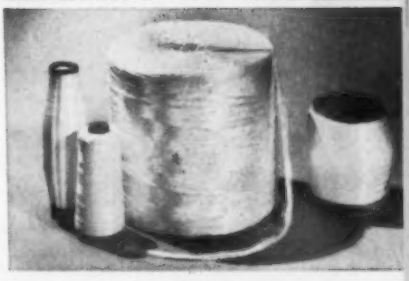
*PLANT LOCATION*—Shelbyville, 27 miles Southeast of Indianapolis, is served by the Pennsylvania and New York Central railroads. The location presents numerous advantages to many users of Fiber Glass.

*PRODUCTION FACILITIES*—The most advanced manufacturing processes and techniques are being employed to assure the production of Fiber Glass which meets the most exacting standards and requirements.

*PRODUCTS*—Two basic forms of Fiber Glass, each in a full range of grades and sizes, are being produced:



SUPERFINE INSULATION—Composed of fibers of exceptional fineness—from 3 to 20/100,000 of an inch in diameter—providing greatest thermal and acoustical insulating efficiency-to-weight ratios, extraordinary strength, compressibility and resiliency. In all standard grades and sizes, or fabricated to specifications.



YARNS, STRANDS AND ROVING—Continuous filament fiber, twisted and plied to provide yarns of the weights and types required for electrical insulation and industrial and decorative fabrics. Roving, composed of continuous filament strands, bundled in parallel, and chopped strands, consisting of roving cut to lengths of ½″ to 2″, for use in plastics.

*TECHNICAL ASSISTANCE*—A staff of trained engineers is available to lend technical assistance in utilizing PPG Fiber Glass to maximum advantage in all applications, particularly those involving new fabricating methods and products.

*RESEARCH AND DEVELOPMENT*—A program of continuing research and development is established for the purpose of giving users of PPG Fiber Glass every future advantage, from refinements in manufacture to benefits in utilization.

*The Unique Properties of*
***PPG FIBER GLASS** Help Make*
*Products* ***BETTER,***
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You may be able to realize important advantages in using PPG Fiber Glass. For additional information, please contact Pittsburgh Plate Glass Company, Fiber Glass Division, 632 Duquesne Way, Pittsburgh 22, Pa. . . . or district sales offices in Chicago, Detroit, New York, Washington . . . or the nearest PPG Warehouse.

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Here's that NEW

DUFF-NORTON

"Shorty"

JACK

... and it's a Honey!

"It's only 7" high and weighs only 22 lbs."

IT WILL PAY TO HAVE SEVERAL AROUND THE PLANT

Yes Boss, you should have one or more Duff-Norton "Shorty" Jacks in every department of your plant. Its low height of only seven inches and light weight make it the most versatile jack in our complete line. It can be spotted under equipment too low for other jacks. It will raise 15 tons 3½ inches with ease. Specify Duff-Norton "Shorty" on your next jack order. You'll want more of them when you see its outstanding performance.

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DUFF-NORTON JACKS ESTABLISHED 1883

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"The House that Jacks Built"


(*Continued from page* 218)

generally eroding they have a tendency to crack or peel. At best they are fire resistant, but no paint has been devised which is entirely fire proof, he said.

*Oil*: This buyers group was reported to be closed to the press, and so a full report is not available. Discussion dealt generally with various specific questions raised from the floor and answered by panel members.

Executive secretary-treasurer George Renard took several jabs at the Democratic administration during his luncheon address and expressed fear of a coming "world-wide shutdown" of business. We are experiencing a "plundering and blundering prosperity" he said, because of "the paradox of a high rate of economic activity combined with a below zero rate of profits." He blamed high taxes and the increased cost of living as the chief enemies of profits.

The conference was closed with an address by George W. Aljian of the California and Hawiian Sugar Refining Corporation, Ltd., and former president of the NAPA. Progress in the field of purchasing can be attained through value buying, and this objective in turn is attained through proper training of buying personnel.

The purchaser is not so much buying parts or materials as he is buying a function. Instead of a car he is purchasing transportation; instead of a pencil he is buying a means to write. By analyzing values, the purchasing agent can cut costs, and that is our life blood, Mr. Aljian said.

The agent must also accept the responsibility of properly selecting and training his assisting personnel. There are five basic factors in selection, he said. These include intellectual competence, emotional maturity, skill in human relations, insight into human behavior, and ability to organize and direct.

General Conference Chairman was W. S. Floyd of the Shell Oil Company in San Francisco, who was responsible for organizing most of the conference program together with E. G. Chambers, executive secretary of the Northern California group. The overall title of "Purchasing Know-How" had been given to this Seventh conference. Mr. Floyd opened the convention on Friday, chaired the luncheon session, and closed the meeting on Saturday.

H. L. Davisson of the Cutter Laboratories, Berkeley, is president of the host association, and in this capacity delivered a welcoming address to the delegates during the luncheon. He commended the purchasing agents on their mutually cooperative spirit in helping one another regardless of the size of the company.

Wives of delegates spent Friday on a tour of "Sunset House" at Menlo Park, the new "Western living" offices of Sunset Magazine. They returned to join their husbands in dinner dancing during the evening.

CLASSIFIED SECTION
PAGE 372

# These "Firsts" Helped Westinghouse Customers

## USERS OF WESTINGHOUSE TUBES GET FIRST BENEFITS FROM MANY NEW TUBE DEVELOPMENTS

These are only a few of the "firsts" that Westinghouse created in the electronic tube industry. In each case, designers using Westinghouse Tubes gained advantages by having first chance to use these innovations.

Today, Westinghouse still pioneers in electronic tubes and tube making. For instance, Westinghouse 40 KV and 20 KV rectifying tubes are under 9 ounces, only 2¾" high. Designers seeking the ultimate in space and weight savings will find them in these new WL-6102 and WL-6103 tubes.

Radical new developments in other power tubes and receiving and television picture tubes are now being engineered at the *NEW* Westinghouse Electronic Tube Division at Elmira and Bath, New York.

### NEW SERVICE, NEW DISTRIBUTION

Westinghouse plans for Electronic Tube Division expansion are in operation. New service facilities, new warehousing policies, and new distributors are opening rapidly.

New merchandising methods will aid distributors in serving industrial users—many of these business-building programs are totally new in the tube industry. Here, as elsewhere, Westinghouse plans to provide industry leadership in service.

*It pays in profits to deal with Westinghouse and with Westinghouse distributors. For full information on how Westinghouse can help you with problems of design, service, or supply, call your nearest Westinghouse representative, or write to* ***Department E-111.***

**RELIATRON™ TUBES**

YOU CAN BE SURE...IF IT'S Westinghouse

ET-95003

ELECTRONIC TUBE DIVISION

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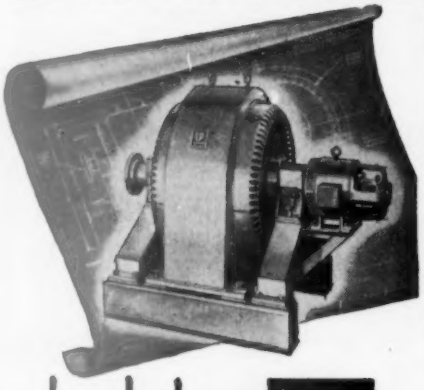

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X-14

## DISTRICT 3 CONFERENCE AT KANSAS CITY

(*Continued from page* 198)

Wayne W. Webster, Purchasing Agent of Interstate Securities, presided at the Monday afternoon session, introducing a panel of commodity experts.

The first subject was "Coal", discussed by A. R. Stock, Vice President of Sinclair Coal Company. He showed charts of coal production and costs, and urged that purchasing policies be set on the basis of year-round requirements to make for more even and consequently more economical production and distribution.

Keith P. Rindfleisch, Sales Vice President of U. S. Steel Supply Division, Chicago, recalled that it took four months to recover from the unbalance caused by the relatively minor steel strike of 1949, and predicted that present shortages would be corrected by midyear of 1953. Meanwhile, he suggested that procurement difficulties could be relieved by giving attention to the possibility of cutting from short lengths, product grouping, and the liberalization of tolerances where this may be possible. He suggested that requirements might be more readily procured by seeking small quantities from several sources rather than accumulating large quantity requirements that might be prohibitive when considered as a unit. Expeditious handling of inquiries can also be promoted by such simple mechanical details as numbering the items on an order for individual consideration, and by double-spacing between items for greater ease in reference.

John H. Reese, Assistant Sales Manager, Dallas Division of Revere Copper and Brass Company, reviewed the situation in aluminum. Despite a tendency toward relaxation of demand with the tapering off of urgent defense requirements, aluminum production is close to its wartime peak and the industry looks toward a capacity of 2,800 million pounds in 1954.

Wallace B. Burnet, Purchasing Agent of Imperial Brass Manufacturing Company, Chicago, pointed out the varieties of composition in different types of brass and bronze, involving rather wide variations in cost and availability. He cited a number of instances in which specific types of these metals were specified on the basis of habit or tradition rather than properties required or adaptable to a particular application. Purchasing in this field, he suggested, could be substantially improved in many cases by a better understanding of the materials themselves.

Arch Stafford, Director of the Producers Goods Branch, OPS, spoke on the current status of governmental controls, in the light of recent amendments. While decrying control for control's sake, he declared that government regulation had been the only means of halting inflationary trends and predicted grave consequences if controls were to be lifted at this time.

For the Tuesday morning session, the presiding officer was Ray Hennier, Purchasing Agent of Fluor Corporation.

(*Please turn to page* 224)

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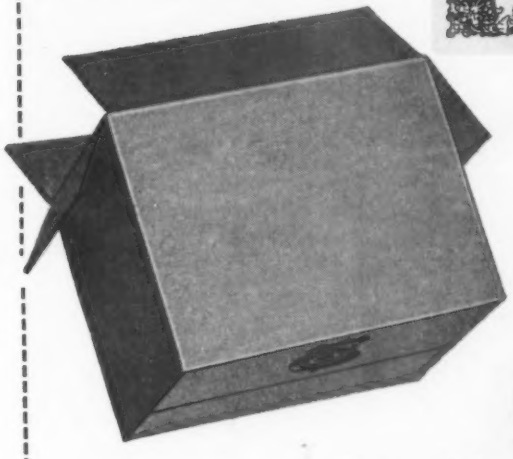

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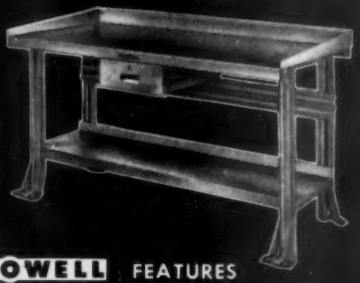

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*(Continued from page 222)*

The opening address was given by Stuart F. Heinritz, Editor of PURCHASING Magazine. Basing his comments on the motion picture "Industrial Purchasing," scheduled for showing later on the program, he discussed the teamwork aspects of procurement, analyzing the nature of teamwork in which each element has particular responsibilities to be coordinated for attainment of company objectives, and pointed out the strategic position which the purchasing function occupies in its own responsibilities and in giving effect to the aims and policies of other departments working toward the common goal.

Harold K. Howe, Washington reporter and commentator for the La Salle Steel Company, gave a rapid fire review of the political situation. He pointed out that the course of national policies depends more on the complexion of the next Congress than on the result of the presidential election itself, and that the contests for Congressional seats point to a very close balance of power, which may go either way. In this connection, he discussed the probable outcome in several of the pivotal states.

R. K. Lane, President of the Public Service Company of Oklahoma, spoke on "Employer-Employee-Customer Relations", making a strong plea for better mutual understanding.

Speaking on "The Ingredients of Peace", Dr. J. C Zwingle, President of Park College, declared that the old saying that "history repeats itself" proves only that men do not learn from the lessons of the past. In his interpretation of history, the way to harmonious living together in one world of many diverse interests is the way of federation. The progress made by Unesco, as contrasted with the lack of unity in the Security Council of UN, was cited as evidence that only this way can prevail.

The Tuesday afternoon session was devoted to the activities of the Educational Committee. W. Howell Pritchard of Milwaukee, District Chairman, gave a comprehensive review of the national program and of the many facilities that are offered for use in local education programs and for the benefit of individual members. He introduced the Educational Committee chairmen of the several local Associations represented, who reported on activities in their respective groups. He also announced the appointment of W. K. Reed of Kansas City as co-chairman for the District.

Following the showing of the film "Industrial Purchasing", sponsored by PURCHASING, the members of the Educational Committee met separately and formulated plans for the year's work.

The conference closed with a well-attended banquet session. The speaker was Judge Harold C. Kessinger, on the topic, "The World's Greatest Adventure".

Members of the District Conference Committee included: W. K. Reed, *General Chairman and Program;* Paul Babb, *Banquet;* Harry Aker, *Reservations;* Ray Hennier, *Welcoming and Information;* W. G. Mezger, *Promotion;* and Wayne Webster, *Finance.*

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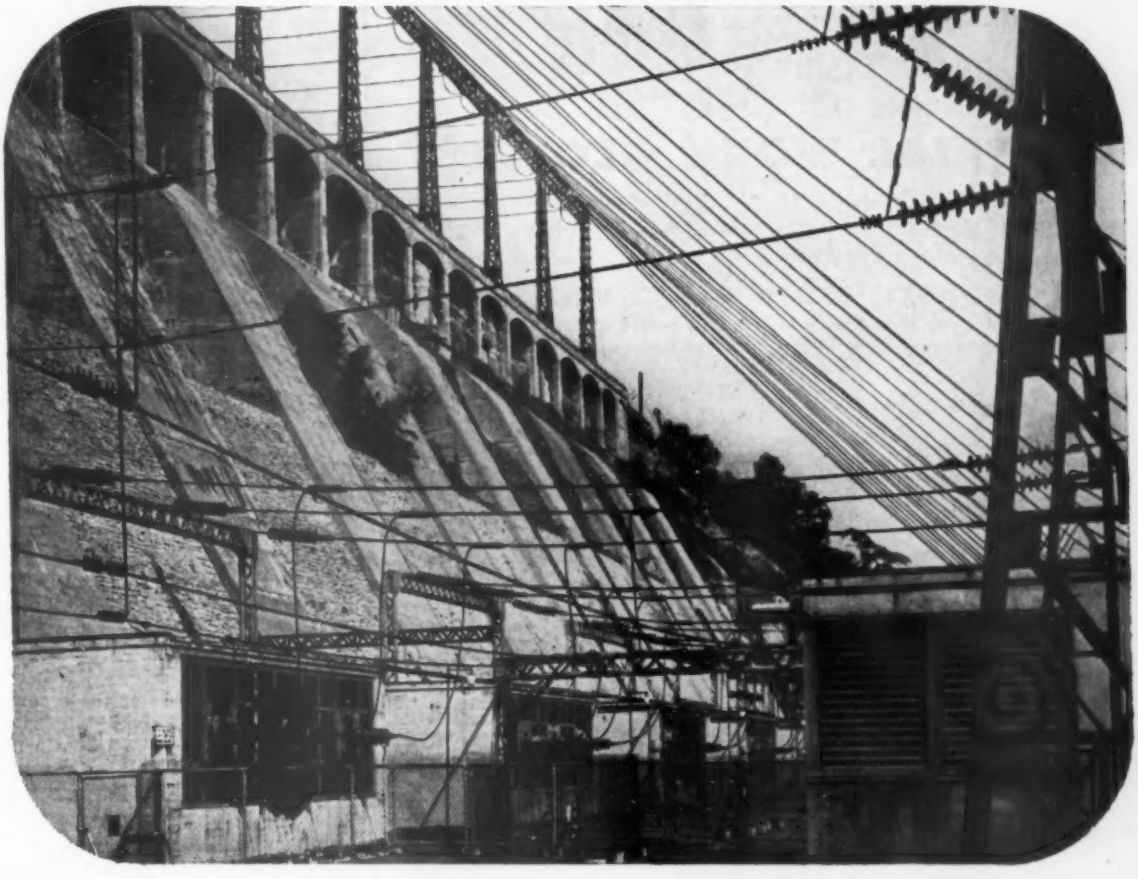

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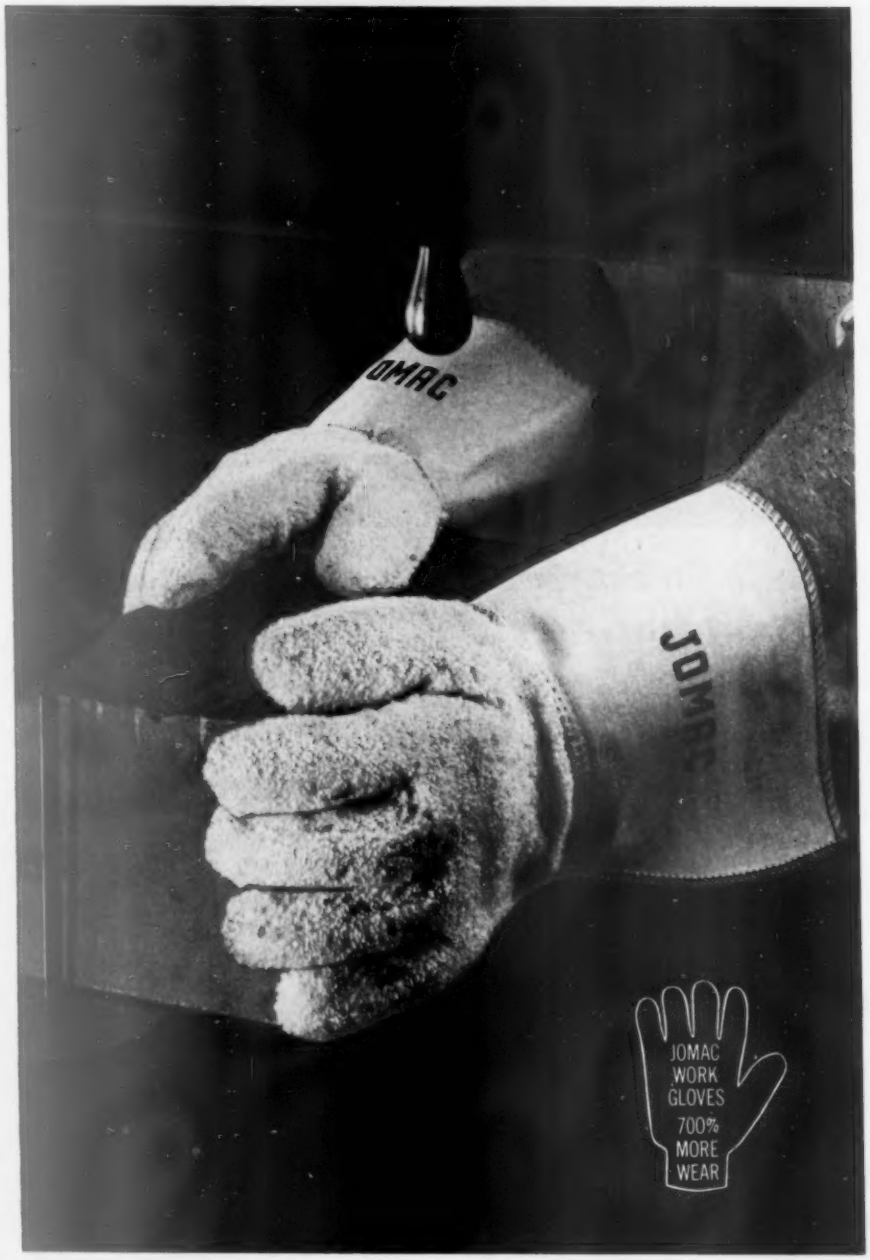


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### "WHERE IS AMERICA HEADING" MILWAUKEE ASSOCIATION TOPIC

A regular meeting of the Milwaukee Association of Purchasing Agents held in September featured an address by Brig. Gen. William H. Wilbur (Ret.), business consultant, on "Where is America Heading?" General Wilbur served with General George Patton in Europe and was on General Douglas MacArthur's staff in Japan. He is a holder of the Congressional Medal of Honor. He was present at the Yalta conference with President Roosevelt, and was a member of the Taft board of strategy in the Senator's bid for the presidential nomination.

In his talk, General Wilbur gave a review of the diplomatic errors made by the United States during and following World War II.

A commodity discussion was held preceding the meeting, with Walter Fehr, X-Ray Division, General Electric Company, as discussion leader. Mr. Fehr, an attorney specializing in government regulations, spoke on "C.M.P. Brought Up to Date."

### TWIN CITY MEETING

A regular meeting of the Twin City Association of Purchasing Agents was held on Wednesday, October 8, in the Curtis Hotel, Minneapolis. The meeting was preceded by a plant visit and luncheon at the Schmidt Brewing Company, in St. Paul.

Principal speaker at the evening meeting was Mike Ousdigian, who spent much of his life behind the Iron Curtain. Mr. Ousdigian's talk was entitled "My Experience With Communists." Subject of the pre-meeting huddle was "When to Manufacture—When to Buy." Fred Morlock was moderator. Art Carlson conducted the commodity session, giving a look at "The Picture in Rubber Today."

### U.S. PRESIDENTS TOPIC AT TRI-STATE ASSN. MEETING

A regular meeting of the Tri-State Purchasing Agents Association was held at the Spring Valley Country Club, Huntington, W. Va., in September. Guest speaker was Professor Charles H. Moffat, whose address was titled "What Manner of Men Were Our Presidents."

### METROPOLITAN CLUB SEES "INDUSTRIAL PURCHASING"

A regular meeting of the Metropolitan Purchasers' Assistants Club was held on Tuesday evening, October 14, at the Midston House, New York City. Feature of the program was the color sound film, "Industrial Purchasing", showing today's industrial purchasing executive in action.

The film was introduced by Paul V. Farrell, Associate Editor of PURCHASING, who conducted the question and answer period following the showing.

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Western Metal Supply Company, San Diego

**COLORADO**
Marsh Steel Corporation, Colorado Springs and Denver
Salt Lake Hardware Co., Grand Junction

**CONNECTICUT**
American Steel & Alloys Corp., Hartford

**DISTRICT OF COLUMBIA**
Lyon, Conklin & Co., Inc., Washington

**FLORIDA**
Horne-Wilson, Inc., Jacksonville, Miami, Orlando and Tampa
Southern States Iron Roofing Co., Jacksonville, Miami, Orlando and Tampa

**GEORGIA**
Southern States Iron Roofing Co., Albany, Atlanta, Augusta and Savannah

**IDAHO**
Salt Lake Hardware Co., Boise

**ILLINOIS**
J. G. Braun Co., (Architectural only) Chicago
Sipi Metals Corp., (Ingot only) Chicago
United States Steel Supply Div., Chicago
Benjamin Wolff & Co., Chicago

**INDIANA**
Hubbell Metals Inc. Indianapolis

**KENTUCKY**
Southern States Iron Roofing Co., Louisville

**LOUISIANA**
Southern States Iron Roofing Co., New Orleans

**MARYLAND**
Clendenin Bros., Inc., Baltimore
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**MASSACHUSETTS**
Bay State Refining Co., (Ingot only) Chicopee Falls
Arthur C. Harvey Company, Boston
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**MICHIGAN**
Keeler Steel Corporation, Detroit
McDonnell Bros., Inc., (Architectural only) Detroit
Milton A. Meier Co., (Ingot only) Detroit and Grand Rapids

**MINNESOTA**
Vincent Brass & Copper Co., Minneapolis

**MISSOURI**
Hubbell Metals Inc., North Kansas City and St. Louis
Marsh Steel Corporation, North Kansas City

**NEW JERSEY**
Barth Smelting and Refining Corp., (Ingot only) Newark
Edgcomb Steel Corporation, Hillside

**NEW YORK**
Barth Smelting and Refining Corp., (Ingot only) Newark, N. J.
J. G. Braun Co., (Architectural only) New York
Edgcomb Steel Corporation, Hillside, N. J.
Rochester Smelting & Refining Co., (Ingot only) Rochester

**NORTH CAROLINA**
Southern States Iron Roofing Co., Raleigh

**OHIO**
The Alles Metal Co., (Ingot only) Cleveland
G. A. Avril Smelting Corp., (Ingot only) Cincinnati
The Hamilton Steel Co., Cleveland
Mutual Manufacturing & Supply Co., Cincinnati
Varys Brothers, Inc., Columbus

**OKLAHOMA**
Vinson Supply Co., Tulsa

**OREGON**
Woodbury & Company, Coos Bay, Eugene, Medford and Portland

**PENNSYLVANIA**
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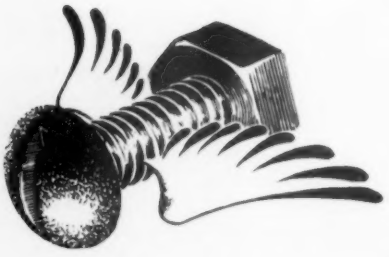

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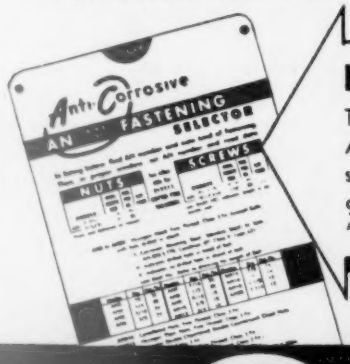


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## CHICAGO ASSN. GIVES $1000 TO JUNIOR ACHIEVEMENT

The Board of Governors of the Purchasing Agents Association of Chicago has presented Junior Achievement of Chicago with a check for $1,000. In a letter to Thomas M. Pendergast, executive director of Junior Achievement, $500 was directed to help defray administrative and operating expenses and $500 for the establishment of a scholarship. The contribution was made for "continued success in teaching the fundamentals of American enterprise."

Last year the Chicago Association set up a scholarship at the Illinois Institute of Technology in memory of the late John P. Sanger, a past president of the association. The organization plans to continue taking similar action in the best interests of good American business.

## CHICAGO ASSN. EDUCATIONAL COMMITTEE HEARS KELLY

W. W. Kelly, General Purchasing Agent for the Atchison, Topeka and Santa Fe Railroad, was guest speaker at the second meeting of the 1952-53 series of the Educational Committee of the Purchasing Agents Association of Chicago. The meeting was held on October 16, at the Hotel Sherman.

Mr. Kelly is widely known for his contributions to transportation and industrial progress, and to various governmental programs. He has been active in the work of the Association of American Railroad Purchases and Stores Division. During World War II, he was an officer with the Defense Transportation Division in Washington, and is presently serving on various industry committees of the National Production Authority. He was selected by Mayor Kennelly as a member of the Board of Standardization of the City of Chicago.

Mr. Kelly discussed procurement practices involving a large operation embracing wide geographical areas and covering many kinds of commodities, services, capital equipment, warehousing, inspection and standardization.

## POLITICAL SCIENTIST SPEAKS AT CLEVELAND ASSN. MEETING

An open meeting of the Purchasing Agents Association of Cleveland was held on Thursday, October 16 at the Hotel Allerton. Guest speaker was Dr. Shepherd L. Witman, professor of political science, Western Reserve University. Dr. Witman, a recognized authority on foreign affairs, discussed the Korean and Far Eastern situations.

An open forum was held prior to the meeting on the subject, "Purchasing's Part in Inventory Control." S. D. Sanders, administrative consultant, Leece-Neville Co., presented the "outside of purchasing" opinion. Harry Henry, purchasing agent, Dobeckmun Co., took the purchasing department's point of view. Chairman for the evening was Charles Conley, purchasing agent, Standard Oil Company.

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## CHRISTENSEN GUEST AT PHILADELPHIA MEETING

A regular meeting of the Purchasing Agents Association of Philadelphia was held at the Bellevue-Stratford Hotel on Tuesday, October 7. Guest speaker was H. W. Christensen, president of the National Association of Purchasing Agents, and director of purchases for Columbia-Geneva Division, United States Steel Company, San Francisco.

The film, "Industrial Purchasing" was presented at the general forum held prior to the meeting. Paul V. Farrell, associate editor of PURCHASING, introduced the picture.

Also appearing at the forum was Charles J. Reimer, purchasing agent, S.K.F. Industries, who spoke on "Disposal of Scrap and Surplus."

## NIAGARA DISTRICT ASSN. VISITS GREAT POWER PLANT

The regular monthly meeting of the Purchasing Agents Association of Niagara District for September was held at Camp #3, Hydro Electric Power Commission, the world's largest power tunnel, at Queenston.

Before starting on the tour of the 5½ miles of tunnel by bus, the members were shown a film on the development of electricity in the Niagara area. They then went from the Queenston generating station to an immediate look-out across the road, overlooking the Niagara Gorge. There they were able to view progress of construction on the new generating station. Highlight of the tour from Chippawa to Queenston was a trip down shafts #3 and #4 into the tunnels. Here they witnessed the removal of solid rock, and the bracing of the 51 ft. diameter tunnels.

After a dinner (reported as consisting of "huge, man-size steaks"), William Hogg, assistant resident engineer of the H.E.P.C., presented colored slides, and a complete explanation of the construction and route of the tunnel.

## GENERAL TIRE PRESIDENT SPEAKS TO CHICAGO ASSN.

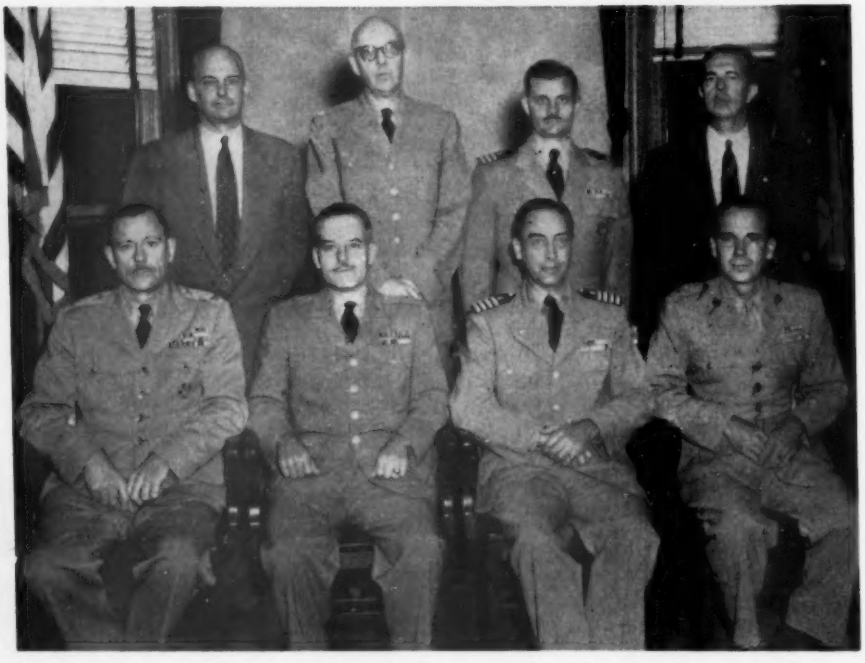
A regular meeting of the Purchasing Agents Association of Chicago was held at the Hotel Sherman on Thursday evening, October 9. Speaker of the evening was William F. O'Neil, chairman of the board, president and general manager of the General Tire and Rubber Company, the world's fifth largest rubber company. Mr. O'Neil's topic was "American vs. European Capitalism."

## WASHINGTON ASSN. HEARS OF "THE GREAT EXPERIMENT"

A regular monthly dinner meeting of the Purchasing Agents Association of Washington was held on Thursday, October 9, at the Olympic Hotel, in Seattle.

Guest speaker was Sol G. Levy, prominent Seattle business man and president of the Seattle Park Board. Mr. Levy, who recently returned from an extensive European trip, spoke on "The Great Experiment."

# New Procurement Agency Formed



Key members of the newly formed Armed Services Textile and Apparel Procurement Agency at its activation in New York by Brig. Gen. Robert P. Hollis. Standing, l. to r., George M. Clarke, Jr., Chief, Legal Office; Colonel J. F. Howard, Chief, Purchasing Division; Commander E. D. Stanley, Jr., Chief, Budget and Planning Office; Arthur D. Baird, Chief, Public Information Office. Sitting, l. to r., Colonel Paul I. Doty, Deputy Chief of Agency Staff; General Hollis; Captain H. T. Dinsmore, Chief, Services Division, and Lt. Col. M. C. Martin, Assistant to the Chief of Agency Staff.

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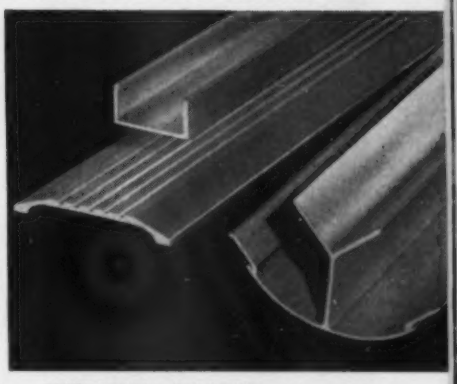

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- Appearance
- High Scrap and Re-Use Value

## *With them* goes the skill of 64 years' experience in fabricating, assembling and finishing aluminum

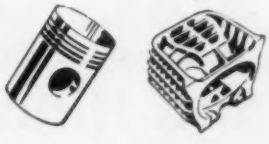
The world's greatest aluminum research and testing facilities are available to help you determine the suitability of aluminum for your products. And to train your personnel, Alcoa offers technical literature and how-to-do-it movies.

## *They are* available from your local ALCOA sales office, distributor or jobber

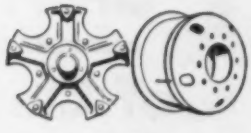
For all possible co-operation in filling your orders, call your local Alcoa sales office, distributor or jobber. You'll find them listed under "Aluminum" in your classified phone book.

**ALUMINUM COMPANY OF AMERICA**
**1809-L Gulf Building • Pittsburgh 19, Pa.**

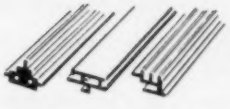
## ALCOA ALSO MAKES PRODUCTS TO CUSTOMER SPECIFICATION



**CASTINGS**
sand, plaster, permanent mold and die



**FORGINGS**
drop, hammer and press forgings



**EXTRUDED SHAPES**

**IMPACT EXTRUSIONS**

**SCREW MACHINE SPECIALTIES**
special fasteners and screw machine parts

# ALCOA *first in* ALUMINUM

For safer assemblies
use the dependable

extra strength

of Cleveland High Carbon
Heat Treated Cap Screws

● For assembly jobs needing fasteners of high tensile strength, it pays you to use popular Cleveland High Carbon Heat Treated Cap Screws—those accurately formed, extra strong screws. They're toughened by heat treating—but that's not the whole story of their dependable holding quality. They're notably *stronger* because made of high carbon steel by the Cleveland-developed Kaufman *Double Extrusion* Process of cold forging—a method that assures you fasteners in which the steel's grain flow conforms to the contour of the screw. Controlled high temperature hardening and drawing give them the extra benefits you expect from heat treated parts. Be sure to specify and buy Cleveland High Carbon Heat Treated Cap Screws.

CLEVELAND *Top Quality* FASTENERS

THE CLEVELAND CAP SCREW COMPANY
2922 East 79th Street, Cleveland 4, Ohio
Warehouses: Chicago • Philadelphia • New York • Providence
originators of the Kaufman DOUBLE EXTRUSION Process
Ask your jobber for Cleveland Fasteners

## NOTED PURCHASING FILM SHOWN TO N.E. ASSOCIATION

A regular meeting of the New England Purchasing Agents Association was held on Monday, October 6, at the Hotel Vendome, Boston.

Feature of the meeting was presentation of the noted color and sound film, "Industrial Purchasing", depicting the operations of a modern purchasing department. Paul V. Farrell, Associate editor of PURCHASING, was the principal speaker, and based his address on the film and its background.

The afternoon forum session was devoted to a discussion of procurement problems of those attending the "purchasing clinic."

## TOLEDO ASSOCIATION HOLDS ANNUAL "SERV-A-SHOW"

The annual "Serv-A-Show" of the Toledo Purchasing Agents Association was held at the Toledo Yacht Club on October 16. The affair featured the exhibition of all types of products of interest to purchasing agents. A buffet dinner was served during the exhibit.

## PAPER COMPANY OFFICIAL GUEST AT R.I. MEETING

A regular meeting of the Rhode Island Purchasing Agents Association was held at the Narragansett Hotel, Providence, on September 22. Guest speaker was Harrison F. Dunning, vice-president of the Scott Paper Company. Mr. Dunning's topic was "What the General Manager Expects from the Purchasing Department."

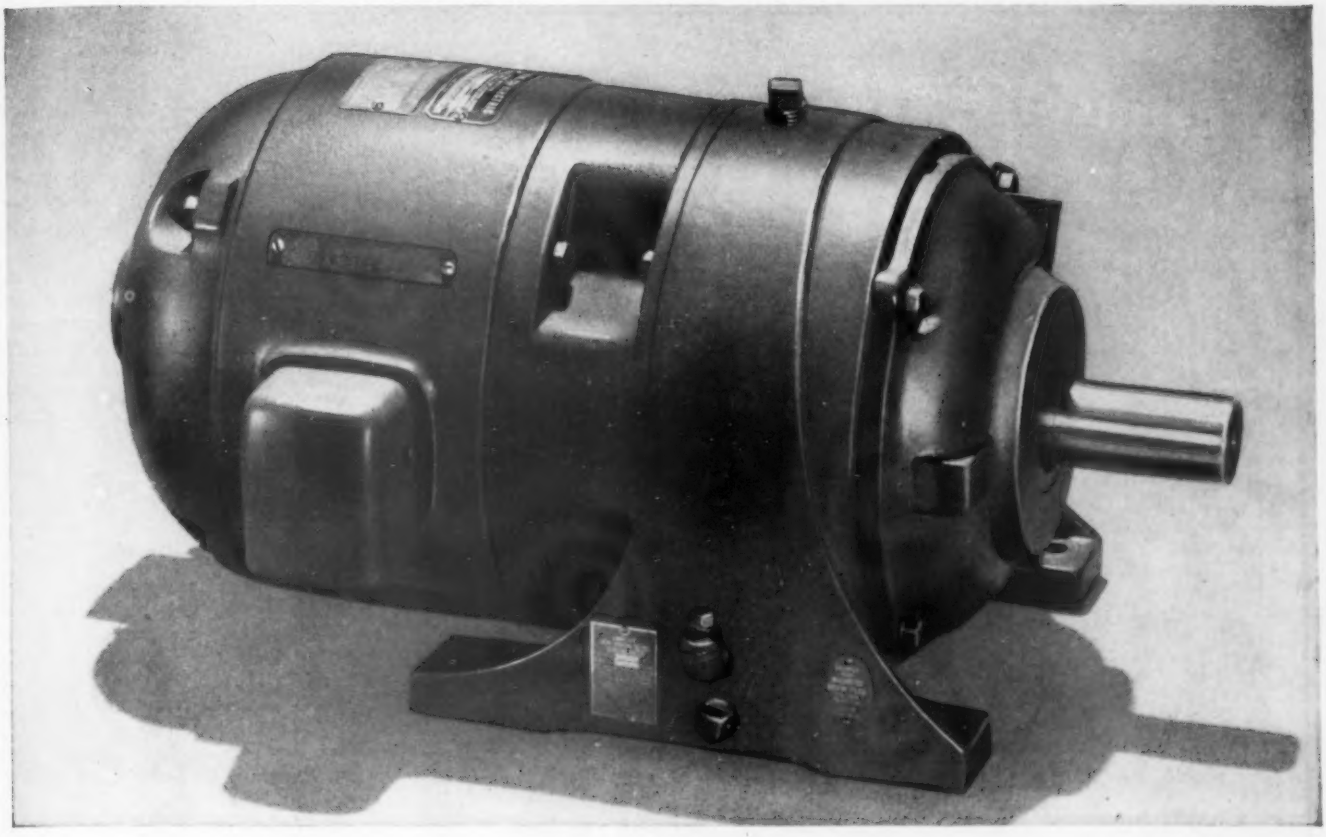
## ROCHESTER ASSN. VISITS CORNING GLASS CENTER

The regular October meeting of the Purchasing Agents Association of Rochester was held on October 22 at the Corning Glass Center, Corning, N. Y. Luncheon and dinner were served at the plant. Various recreation facilities were also made available to the visitors.

Paul V. Farrell, associate editor of PURCHASING, was guest speaker at the association's September 24 meeting in the Rochester Club. Mr. Farrell introduced the color sound film, "Industrial Purchasing."

## "LIQUID GOLD" TOPIC AT BRITISH COLUMBIA ASSN.

Highlight of the first meeting of the new season of the Purchasing Agents Association of British Columbia was an instructive presentation by H. D. Ainlay, former mayor of the City of Edmonton, on the oil industry. Entitling his talk, "Liquid Gold", Mr. Ainlay gave an educational outline of the oil industry from its birth in geological history as an ocean bed, up to the establishment of the British Columbia pipe line.



# G.E. Announces Improved Gear-motor Design

## Maintenance costs and time cut more than 50% by new gear-motor

General Electric's improved gear-motor is a single unit —a superior low-speed drive, now redesigned to further reduce maintenance costs. Here's how!

**STATOR REMOVAL** may now be accomplished without disturbing the gear train in any way. Simply remove the endshield, the four bolts which secure the stator, and pull off the stator. Because this is part of the complete line of *standard* G-E motors, you can use *any* G-E motor stator of the same size as a replacement.

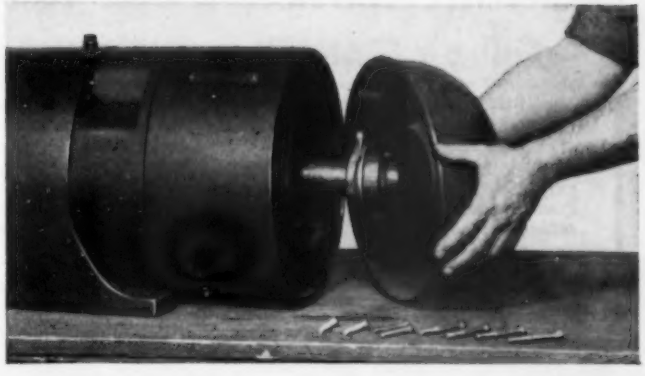
**TRI-CLAD* MOTORS**—the most reliable, most widely-accepted motors available—are now an integral part of *every* G-E gear-motor, either open or totally enclosed. All open gear-motors have dripproof construction.

**PROMPT SHIPMENT** is made possible by G.E.'s new stocking plan, which keeps popular ratings stocked at multiple points throughout the country. In addition, over 250 models are now on a one-week shipping schedule from the factory.

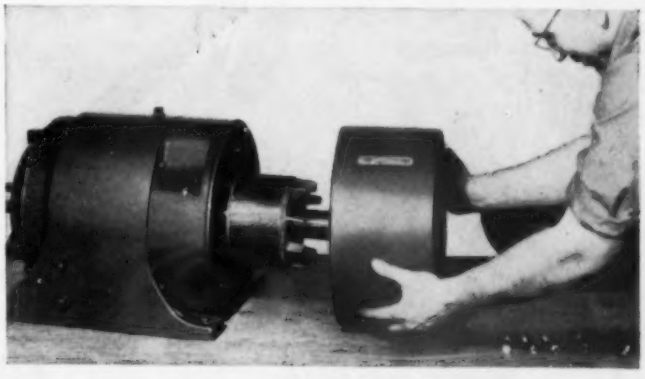
G-E gear-motors, being single units, are easier to install and maintain than motors coupled to separate, external gear reducers. They're available in standard enclosures to fit any application. Order your G-E gear-motor through your nearest G-E Apparatus Sales Office, or your Authorized G-E Agent or Distributor. General Electric Company, Schenectady 5, N. Y. 755-9

*Reg. trade mark of General Electric Co.

GENERAL ELECTRIC



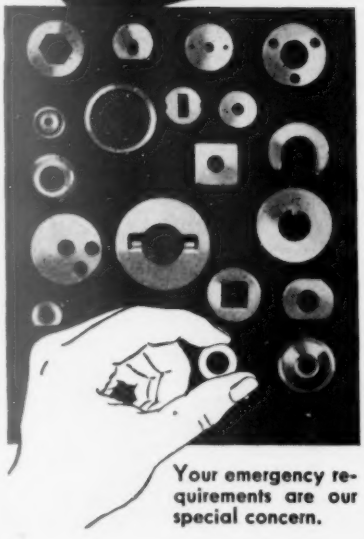
**ENDSHIELD REMOVAL** is a simple matter. Remove the bearing-cap and endshield bolts, and lift the endshield from the stator.



**STATOR REMOVAL** now consists of just removing the four stator bolts and slipping the stator from the gear-motor housing.

Standard ..Specials

STEEL WASHERS FOR EVERY NEED



A DEPENDABLE SUPPLIER FOR 38 YEARS . . .

Your requirements for standard and special steel washers are sure to be satisfied at Joliet. A bank containing thousands of special dies in many shapes and forms, 9/32" to 8" O.D., gauges No. 28 to 3/8", stands ready to answer your needs. A VARIETY OF FINISHES IS AVAILABLE to meet your special needs, including: Electro-plating, Galvanizing, Parkerizing, and Cyanide hardening.

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THERE'S NO SUBSTITUTE FOR QUALITY AND SERVICE

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JOLIET WROUGHT WASHER CO.

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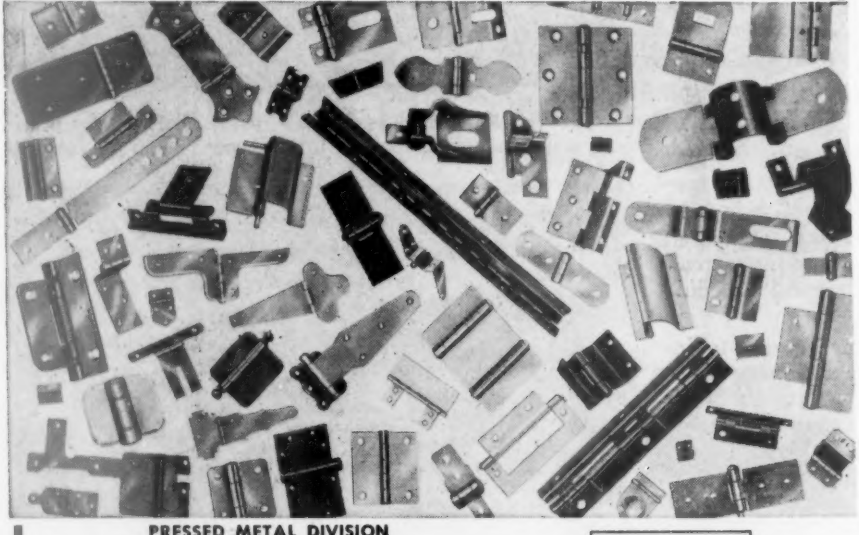
You just specify the hinge you want —Stanley does the rest, from first sketch to finished product.
Stanley gives you the advantage of expert designers and production engineers—complete research and toolmaking facilities—and the plating and finish best suited to your needs. As the world's largest producer of hinges, Stanley is geared for efficient production to meet your D. O. deadlines. Write for full information—not only on special hinges, but drawings and stampings as well—now!



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## "ADVERTISING AND PURCHASING" DENVER ASSOCIATION SUBJECT

A regular meeting of the Purchasing Agents Association of Denver was held in the Brown Palace Hotel on Thursday, October 9. Guest speaker was Grover Kinney, president of the Advertising Distributing Service. Mr. Kinney's subject was "Advertising and Its Relation to Purchasing Agents."

Following the meeting, an educational forum was held, with a complete discussion on the Kansas City Conference.

Among the new members of the Denver Association are Bernard O. Beausang, purchasing agent for the City of Boulder, and Wm. H. Mawhorter, of Dixon and Company.

## NEW ORLEANS ASSN. HOLDS SALESMEN'S NIGHT MEETING

A Salesmen's Night meeting of the Purchasing Agents Association of New Orleans was held on Tuesday, October 7. Sales forces of member companies were invited.

Principal speaker was Marlin H. Bruner, manager, southern district, E. I. du Pont de Nemours & Company, Inc. His subject was "Progress in Better Living", a demonstrational talk based upon recent developments in the chemical industry. There was also a short talk by Robert Elsasser, the association's economist.

## CENTRAL IOWA ASSN. HOLDS MANAGEMENT NIGHT MEETING

Officials of member companies were special guests at the Management Night meeting of the Central Iowa Purchasing Association, held in the Kirkwood Hotel, Des Moines, on October 14. The affair was opened with a social hour preceding dinner.

A showing of the sound color film "Industrial Purchasing" featured the September meeting of the association.

New members include D. Barnett, Lennox Furnace Co., Marshalltown; R. E. Wagaman, Bettendorf Oil Burner Co., Marshalltown; O. W. Diemer, Lanagan Paper Co., Des Moines; G. A. Erbeck, Eddy Paper Corp., Cedar Rapids.

## ST. LOUIS ASSOCIATION SEES "INDUSTRIAL PURCHASING"

A regular meeting of the Purchasing Agents Association of St. Louis was held at the Sheraton Hotel on October 28.

Preceding the meeting, the Educational Committee presented the color sound film, "Industrial Purchasing." The movie was followed by an interesting open forum and round table discussion.

The guest speaker for the evening was Dr. J. Zwingle, president of Park College. Dr. Zwingle was director of United Service Organizations in continental United States until 1947. His subject was "Ingredients of Peace."

## *Finding fuel for freedom*

In field after field, the search for oil—life blood of America's industrial and military might—is spearheaded by OSTUCO Tubing in the form of core barrels, drill rods, shells, special couplings, and the like.

Engineers in the progressive oil business specify OSTUCO Tubing because they know it is made by tubing specialists with experience dating from the time seamless tubing was first produced in this country. They know they can count on OSTUCO for tubing of highest quality. Many other industries use OSTUCO Tubing—seamless or electric welded—because it enables them to increase strength, reduce weight, and cut cost of their products. We cannot always promise early delivery estimates on new civilian orders, because of military demands, but it will pay you to consult our experienced engineers about OSTUCO Tubing when redesigning your products to meet future competition.

From Your Blueprint . . . to Your Product
OSTUCO TUBING
Tapering • Swaging • Flanging • Bending
Upsetting • Expanding • Reducing • Beading
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Notching • Flattening • Shaping • Trimming
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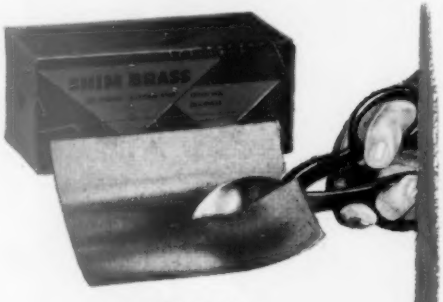
# PACKAGED BRASS AND STEEL SHIM STOCK

**Ready for instant use without fumbling or waste**

Packaged shim stock means *convenience!* No clumsy handling or spoilage of large bulky sheets or rolls. In our dispensing cartons and packets the stock is always protected, yet always available for immediate use. Just pull the length you need out of the carton slot—and snip it off. Saves time, saves space!

**There's a handy carton, packet or rack designed for your requirements by the makers of the famous LAMINUM Shims**




**RUGGED CARTON DISPENSERS**

6 x 100 inch rolls in metal-edged cartons. Stock feeds through carton slot, as required. No re-rolling, no ruined stock. Available in 11 gauges: .001, .0015, .002, .003, .004, .005, .006, .007, .008, .009 and .010 inch.

**STURDY FLAT PACKETS**

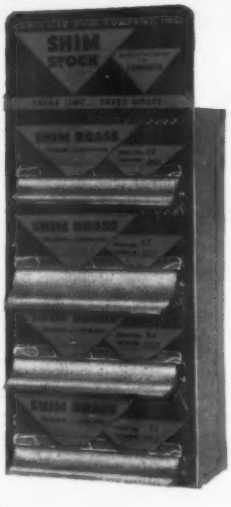
Two 6 x 25 inch sheets to the envelope. The heavier gauges — which do not roll easily—are supplied in special protecting flat packets: .012, .015, .020, .025 and .032 inch.

**THE 4-GAUGE ECONOMY CARTON**

Four 6 x 50 inch rolls in one carton. The utility unit, containing the four most popular gauges: .001, .002, .003 and .005 inch. The same first quality brass or steel shim stock.

**THE METAL DISPENSING RACK**

Holds the four gauges of your choice. Pick the four gauges you use the most. Rack is designed to hold the 6 x 100 inch carton dispensers. Sets on bench or hangs on wall.




*Check with your industrial distributor!*

**LAMINATED SHIM COMPANY, INC.**

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SHIM STOCK

STAMPINGS CUSTOM SHIMS AN·COR·LOX NUTS


## TAFT-HARTLEY DISCUSSED AT CINCINNATI ASSN. MEETING

A regular meeting of the Cincinnati Association of Purchasing Agents was held on Tuesday, October 14, at the Hotel Sheraton-Gibson. Guest speaker was Philip J. Kennedy, attorney and professor at Xavier University. His subject was "The Taft-Hartley Act, Its History and Future."

The association held a dinner dance at the Sunny Hollow Inn on Thursday, October 30. Movies taken at the Ladies Picnic, and Stag Party, were shown.

## THREE FEATURES AT BUFFALO ASSN. MEETING

Three outstanding features marked the October 8 meeting of the Purchasing Agents Association of Buffalo. The meeting opened with an afternoon plant visitation at the Ford Motor Company's Buffalo stamping plant.

The color sound film, "Industrial Purchasing" was presented at the regular evening meeting. Following the film, the group heard an address on "The Economic Outlook," by Dr. Robert W. Johnson, assistant professor of finance at the University of Buffalo.

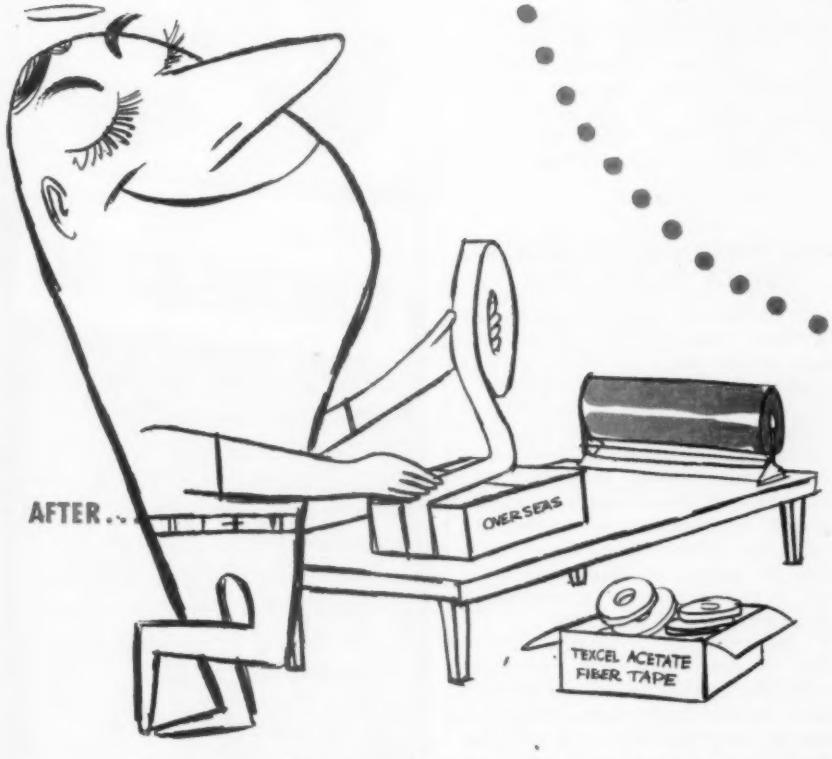
## SELECT STANDARD WHITE FOR POLYSTYRENE REFRIGERATION PARTS

The plastics industry in cooperation with refrigerator manufacturers have selected a shade of white that will be considered standard for the production of refrigerator parts made of polystyrene plastics, according to an announcement by the Commodity Standards Division of the U. S. Department of Commerce. The selection has the endorsement of a standing committee of the industry representing all interests.

The problem of matching white plastic parts with the white porcelain enamel or other surface finish of refrigerators has been under consideration for some time. Slight differences in appearance between the parts assembled in the refrigerator are very objectionable to both the refrigerator manufacturer and the purchaser. Therefore, it was often necessary to resort to extensive experimentation to develop a satisfactory shade of plastic material. With the adoption of this standard for the plastics industry, refrigerator manufacturers and plastic molders will be spared much of that costly experimentation and the customer will be better pleased.

The new standard white becomes one of 19 standard colors covered by the Commercial Standard for Colors for Polystyrene Plastics, CS156-49. That standard was established in 1949, and now includes three standard shades of white, as well as standard shades of green, pink, yellow, blue, brown, red, and black. The publication containing colorimetric data and other information on those colors may be purchased from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., for five cents per copy.

# Texcel and Permacel Tapes.




## ...can save you money...

by speeding production and shipping... by increasing office efficiency... in any operation... in any business. There are actually hundreds of ways to economize with the 66 tapes we make. How many kinds of savings would you like to start with?

**TELL US QUICK!**

**PERMACEL®—TEXCEL®** PRESSURE-SENSITIVE TAPES • INDUSTRIAL TAPE CORP., NEW BRUNSWICK, N. J.

**WIDE SELECTION MEETS MOST NEEDS**

The fact that *so many* manufacturers find there are Pheoll stock fasteners that meet exact needs — makes Pheoll stocks the *one source* for you to depend on, too. Our wide range of sizes, metals and finishes simplifies assembly problems; speeds production—because fasteners that fit, make jobs go faster!

**ADEQUATE STRENGTH MEANS BETTER COMPLETED PRODUCTS**

Pheoll rolled threads and cold formed heads provide maximum structural strength to meet stress and strain. Snug thread mating surfaces assure greater contact with more lasting grip—adding life and service to your assembled products.

**FINE FINISH IMPROVES YOUR PRODUCT APPEARANCE**

The extra fine head and thread finish of Pheoll quality fasteners improves the salability of your product. They help "dress up" the job! You can select from a wide variety of attractive head types in screws for metal, wood and plastics—nuts with single or double chamfer in various metals and finishes.

*Write for Additional Information and Price List.*

**MAKE PHEOLL YOUR SOURCE FOR:** Semst† • Thread Cutting Screws† • Threaded Rods • Wood Screws† • Machine Bolts • Cap Screws • Stove Bolts† • Thumb Screws • Machine Screws†

*†Furnished in slotted and Phillips Recessed Head Types*

**PHEOLL** MANUFACTURING COMPANY
5700 Roosevelt Road, Chicago 50, Ill.
SCREWS BOLTS NUTS


## MAKES EASY JOB OF SNOW REMOVAL

Operating on the same principle as large rotary snow plows, the Jari Jr. Rotary snow plow makes an easy job of snow removal from walks and driveways. Self-propelled, this light yet powerful unit clears 4,500 square feet and handles up to 18 tons of snow per hour.

A rotary rake breaks up the snow which is thrown through a casting chute adjustable for height and distance. A clean path 16 inches wide is cleared in one pass. A two-wheel drive providing positive forward movement is obtained by hardened steel pinions engaging notches in specially developed semi-pneumatic tires. An independent clutch permits starting the four-cycle engine without load. Extra attachments are available so that the unit may be converted quickly for use as a power scythe with a 28-inch sickle bar, and as a power mower with 20-inch reel.

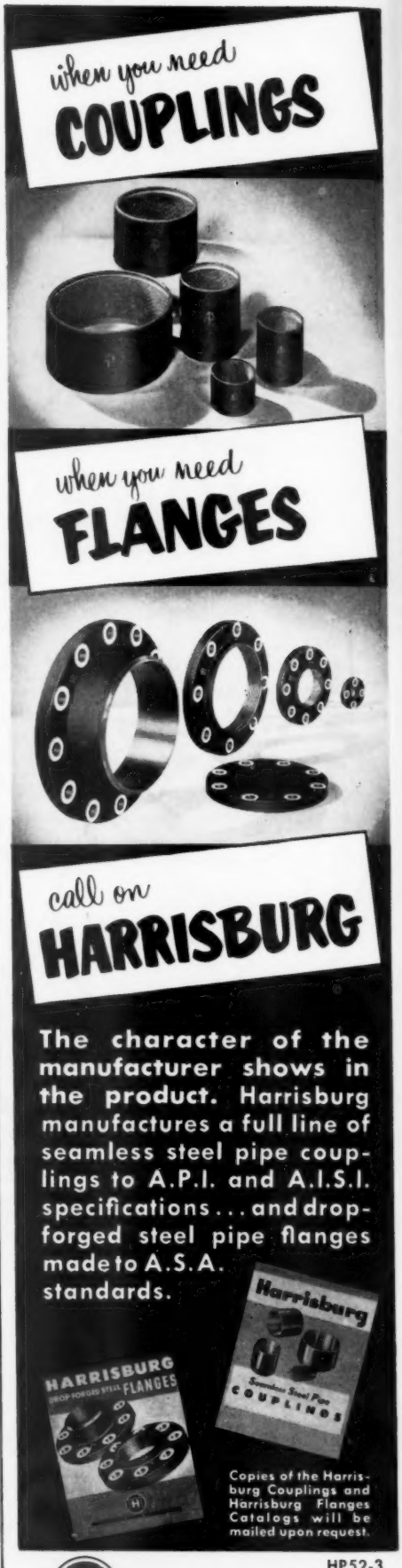
## SMALL PURCHASES CONTROL IN DISTRICT OF COLUMBIA

"The problem of small purchases has always been very troublesome to purchasing agents, as well as to vendors transacting business with the Government," states Purchasing Officer Roland Brennan, District of Columbia, Washington, D. C., in his annual report for the fiscal year ended June 30, 1952. "Committees of the Congress and the Federal Government have tackled the task of trying to simplify purchasing procedures to reduce administrative costs, as well as to insure proper accountability in the expenditure of public funds.

"A year or two ago, the District adopted a new purchasing procedure through the medium of a combination purchase order-voucher form, which has resulted in simplification in the procurement of casual supplies not otherwise procurable from existing contracts, costing less than $100, without any sacrifice of good accounting methods.

"The Auditor and the Purchasing Officer, with the collaboration of the General Accounting Office, studied the problem at length and designed the combination purchase order-voucher form and regulations governing its use. The Commissioners approved the new procedure, under which the Purchasing Officer delegated authority to all District Departments and Agencies to make di-

(*Please turn to page* 246)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COUPLINGS
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FLANGES
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HARRISBURG
The character of the manufacturer shows in the product. Harrisburg manufactures a full line of seamless steel pipe couplings to A.P.I. and A.I.S.I. specifications... and drop-forged steel pipe flanges made to A.S.A. standards.
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Copies of the Harrisburg Couplings and Harrisburg Flanges Catalogs will be mailed upon request.

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99 Years in Pennsylvania's Capital
**Harrisburg Steel** CORPORATION
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# CUT voltage loss to a minimum

## with re-designed high efficiency feeder busduct

IT'S THE LAST WORD in efficient, flexible and economical power distribution from service entrance to distribution center, from generator to switchboard and from switchboard to distribution center.

Re-designed, inside and out, to assure maximum efficiency, FA High Efficiency Feeder Busduct has proven, in actual tests, that it will *reduce voltage loss to less than 2 volts per 100 feet at 80 percent power factor.*

Made for either indoor or outdoor installation, this new, more efficient method of power transmission has smaller size enclosures, less weight, and perforated sectional covers — top and bottom — for maximum heat dissipation.

Conductors are insulated with varnished cambric tape and plastic type tape for maximum protection. Joints are electrosilver plated (by immersion) for better low resistance contact and secured by either two or four brass jam bolts that fit into elongated fastening holes to allow for expansion, and phosphor bronze-cupped washers to maintain pressure.

The fact that sections can be run either vertically or horizontally, up and around pipes and other difficult angles and through walls, floors and ceilings, makes this type FA Feeder Busduct even more desirable.

FA High Efficiency Feeder Busduct is available in capacities, from 600 to 4,000 amps., 600 volts single phase for welder service, three phase for power, three-phase, four wire service for light and power.

For additional details, consult your nearest FA representative listed in Sweets. He'll gladly tell you more about this modern, more efficient system of power and light distribution.

## *Frank Adam Electric Co.*

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*Makers of* BUSDUCT • PANELBOARDS • SWITCHBOARDS • SERVICE EQUIPMENT • SAFETY SWITCHES • LOAD CENTERS • QUIKHETER

**ROUND CALIFORNIA CHAIN CO.—**
an important link in the nationwide Round Chain organization — is under the direction of J. D. Cavan, a Round veteran of 15 years. Like all other Round Chain Companies, Round California supplies a *complete line* of welded and weldless chain, slings, chain hoists, electric hoists, trolleys and winches. *Sold exclusively through wholesalers and distributors.*

J. D. CAVAN

(*Continued from page 244*)

rect open market purchases, limited to $100, from vendors on an "across the counter" basis, but with the distinct understanding that all such transactions will be under the supervision and control of the Purchasing Officer, D. C., to prevent possible abuse and repetitious transactions.

"During the last year D. C. agencies issued about 13,000 of these purchase orders, representing an expenditure of $644,000, an average of about $49.50 an order; about 5 or 6% of the total valuation of all purchases for the District. There has been practically no abuse of this purchasing authority, while the controls in the Purchasing Division have been adequate to keep small purchase expenditures within reasonable limitations."

Mr. Brennan's report shows that the total valuation of all orders issued during the fiscal year amounted to $12,086,040, an increase of approximately $375,000 over the preceding year. By taking advantage of discounts offered, and in some cases, obtaining discounts after bids were opened (which did not allow a discount) the District realized $47,447.04.

Commenting on Economic conditions, he reported that "a buyer's market prevailed in most commodities during the year except in those categories produced by industries which felt the stimulation of military buying for defense needs. This caused some shortages in certain metals and metal products which was reflected in the reduced number of competitive bids received for District requirements. Sometimes no bids were received. We were required to negotiate with suppliers with the aid of the National Production Authority in many instances. Our Priorities and Allocations section was particularly active in contacting officials of claimant agencies and the N.P.A. in the effort to procure necessary materials and equipment within a reasonable time. Verbal directives were received in some instances.

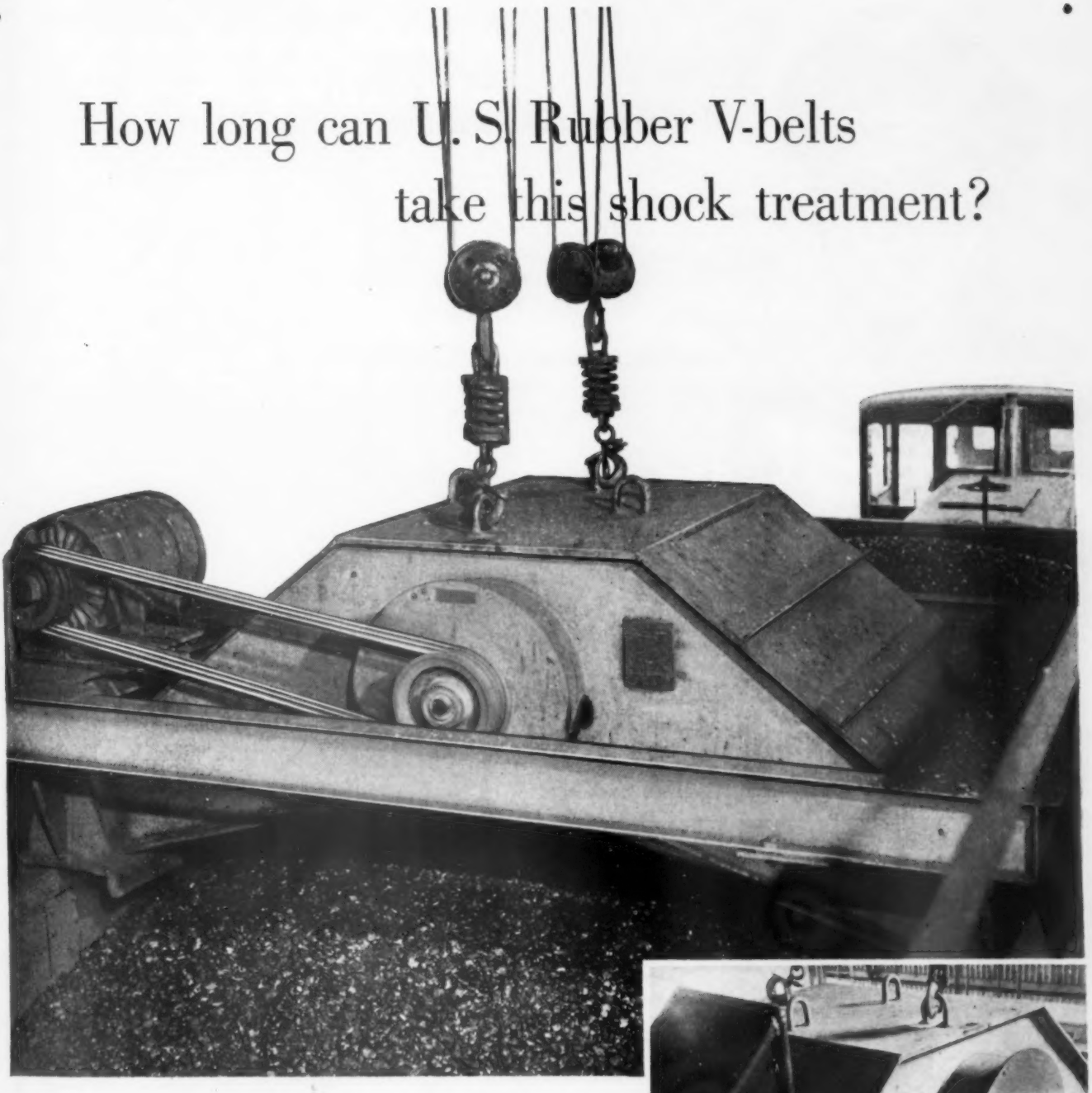
"Delayed deliveries caused trouble, but no serious interruption or impairment of the District's vital municipal functions occurred during the year, so far as we know. The delay in deliveries did, however, impose heavy correspondence and keep our expediting facilities very busy.

"In most markets, we received excellent competition on our invitations to bid, principally for soft goods, small electrical appliances, paints, lumber, leather products, hardware, school supplies, plumbing and electrical supplies, gasoline and building and construction materials."

Another interesting paragraph of the report cites a recurring saving of $175,000 annually as the result of legislation initiated by the Purchasing Officer with the cooperation of the Federal Supply Service, G.S.A., to relieve the District of direct and indirect surcharges of the Federal Supply Service for items purchased by the District. Also, the District has been saving $45,000 to $50,000 a year during the past five or six years by buying oleo instead of butter for the various District institutions. A savings of ap-

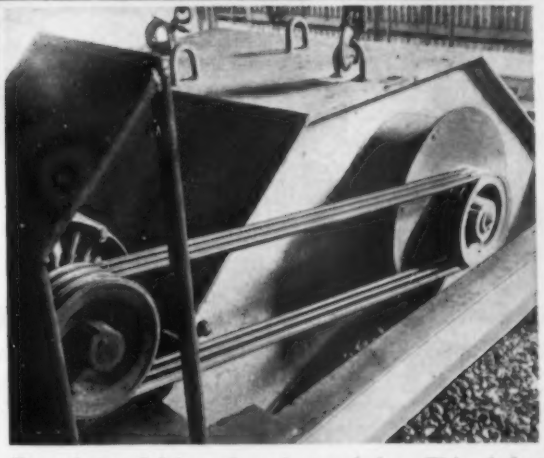
(*Please turn to page 248*)

# How long can U. S. Rubber V-belts take this shock treatment?



Working on a coal car shaker is probably one of the worst shock loads V-belts are called upon to take. With every revolution they must transmit the power to shake a loaded coal car with sufficient force to loosen tons of packed or frozen coal. Yet this matched set of "U.S." Rainbow V-belts has been working steadily on this shaker for more than 10 months. Previously, three other brands of belts had lasted an average of three weeks apiece. Moreover, the "U.S." belts never jump the pulleys as did the other brands that were tried.

Installing "U.S." V-belts always results in extra operating profit because "U.S." belts are built to handle *extra-rugged* conditions. They have the unique Equa-Tensil Cord Section — a development which makes certain that each cord pulls its *full* share of the load. For more information, write to address below.

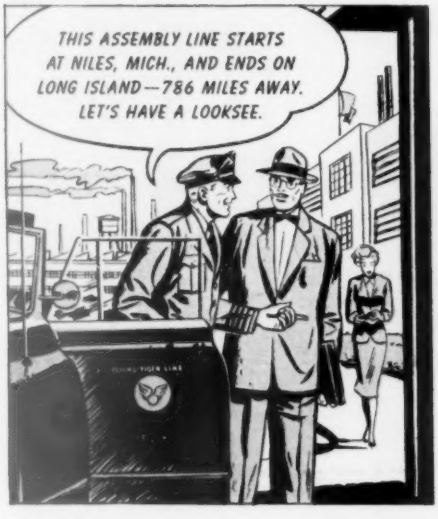


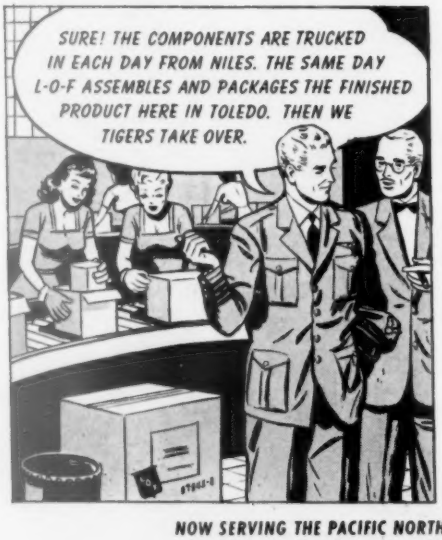
**Two views of drive** of coal car shaker. This shaker handles over 30 cars a day, is equipped with a matched set of three C-144 super-service V-belts.

PRODUCT OF U.S. RUBBER — SERVING THROUGH SCIENCE

**UNITED STATES RUBBER COMPANY**

**MECHANICAL GOODS DIVISION · ROCKEFELLER CENTER, NEW YORK 20, N. Y.**




SURE! THE COMPONENTS ARE TRUCKED IN EACH DAY FROM NILES. THE SAME DAY L-O-F ASSEMBLES AND PACKAGES THE FINISHED PRODUCT HERE IN TOLEDO. THEN WE TIGERS TAKE OVER.

**NOW SERVING THE PACIFIC NORTHWEST!** With Regularly Scheduled Service to and from Seattle, Washington; Tacoma, Washington; and Portland, Oregon.

Write for "THE AIR FREIGHT WAY TO LOWER COSTS AND BETTER SERVICE"
FLYING TIGERS ... ANOTHER BUSINESS BUILT ON 'CAN DO'
The Flying Tiger Line Inc.

OFFICES IN PRINCIPAL CITIES • GENERAL OFFICES: LOCKHEED AIR TERMINAL, BURBANK 8, CALIFORNIA • CABLE: FLYTIGER


(*Continued from page* 246)

proximately $30,000 over 1952, was made on the purchase of uniforms and caps, by initiating a purchase contract therefor at an earlier date than usual, incident to a study of the wool market.

Among the heavy group expenditures for the year were the following: Foodstuffs, $2,217,260.00; fuel $1,203,513; motor vehicles, trailers, etc., $698,167.00; machinery and equipment $383,176.00; office equipment $365,163.00; pipe fittings and pipe $543,262.00; stationery $398,335; hospital and laboratory $437,125.00; precision instruments $272,185.00; building material $421,058; electric apparatus $344,968.00; cable and wire $198,500.00; clothing $291,740.00; dry goods $303,470.00; books—law, reference, text, maps, magazines, etc., $282,903.00; furniture $431,259:

In January Mr. Brennan was appointed a member of the Business Survey Committee of the N.A.P.A., and during the year was named a member of the Federal Supply Board of the Federal Government.

## PHARMACEUTICAL COMPANY DEVELOPS BOTTLE NECK-BANDING MACHINE

An automatic cellulose bottle neck-banding machine has been devised by Smith, Kline & French Laboratories, pharmaceutical manufacturers, 1530 Spring Garden St., Philadelphia, Pa. The machine was developed by the Mechanical Development Section of the pharmaceutical

**The automatic cellulose bottle neck-banding machine in operation.**

company to speed the production of pharmaceuticals for the U. S. Defense Program. It automatically applies bottle neck bands now put on by hand in the bottling and packaging operations of a wide variety of industries. Several machines were made and put into operation on various bottle and band sizes, in several companies. One company, it is reported, has been able to replace five girls with a machine and one operator.

The new machine is described as a complete yet compact and mobile unit which is readily incorporated into existing packaging lines. It is easily operated by one girl. It is stated that one operator could handle several machines if they were placed so that she would not have to work over too wide an area.

# ANTIQUATED...

Fulton's Clermont—1807

## by Comparison!

*Hand Coremaking*

## IS YOUR Pattern Equipment JUST AS ANTIQUATED?

Shortly after the famed Clermont made navigation history, Seth Boyden established his pioneer malleable iron foundry. Today, Sacks-Barlow, direct descendants, continue to assist industry's efforts for new operational economies by eliminating antiquated methods.

The antiquated hand box above, for instance, makes but one core at a time . . . a slow and inefficient operation; at the right however, is an example of improved technique—by using a blower core box, 4 instead of 1 cores are made simultaneously.

At Sacks-Barlow every effort is made to analyze each order to determine the most efficient and economical process to be used for molding and coremaking. Our "know-how" based on 126 years' experience producing gray, malleable and ductile iron castings is at your disposal—without obligation.

*Machine Coremaking*

## Sacks-Barlow FOUNDRIES, INC.

NEWARK MALLEABLE IRON WORKS

357 Wilson Avenue, Newark, N. J.

RESIDENT REPRESENTATIVES IN NEW YORK, PHILADELPHIA, BOSTON, BALTIMORE AND PROVIDENCE, R. I.

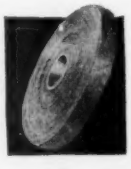
Adhesive Backed
TREATED FELT TAPES

1. Install Faster
2. Resist Deterioration

PRC tapes feature natural anti-deterioration and rattle cushioning values. Special impregnations also provide unmatched *protective sealing* characteristics. FOR EXAMPLE:

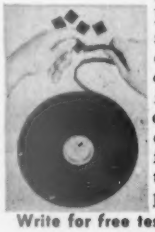
**CHROME LOCK**
This product inhibits electrolysis and corrosion. Is also anti-wicking. Seals under pressure. Adhesive back is pressure sensitive. TYPICAL SEALING APPLICATIONS: Instruments; glazing channel window sash; skin laps on bus bodies; weatherseal for trailercoaches.

**KLING FELT**



Features a new, solvent-activated adhesive (one side only) that sticks to all surfaces. Can be applied to cold metal. WON'T PULL LOOSE!

TYPICAL APPLICATIONS: Weather Strip for windows, doors, etc.; dust and moisture seal for electric control panels; rattle cushioner.



**PRE-SEGMENTED**
PRC tapes can be supplied in segmented rolls according to order. Each segment is pre-cut to a sufficient depth to permit easy detaching. Ideal for volume application of equal-size pieces.

Write for free test sample and new engineering folder—TF-111

PRC

**PRODUCTS RESEARCH CO.**
3126 LOS FELIZ BLVD., LOS ANGELES 39, CALIF.
Representatives in All Principal Cities


## COPPER-CLAD STEEL PLATE NEW ENGINEERING MATERIAL

Production of copper-clad steel plate, a new engineering material combining the special properties of copper and steel, is announced by the Lukens Steel Company. Available in plate gages only, the new copper-clad steel consists of a layer of copper permanently and uniformly bonded to one side of a carbon steel backing plate. Cladding percentages of 10, 15 or 20 percent of total plate thickness will be made in plate sizes up to 120 inches width, 380 inches long and 3/16 to 1-1/4 inches thick. They will also be available in flanged only or flanged and dished heads. Two types of cladding are regularly furnished; oxygen-free high conductivity copper for special electrical applications, and phosphorous deoxidized copper for improved weldability. Other copper and copper alloys can also be produced in the form of clad steels.

Mechanical properties of copper-clad steel are governed by the type of backing steel used. Backing steel may be any of the plain carbon or low alloy steels of flange or firebox quality conforming to ASTM or ASME specifications. The copper-clad steels can be sheared, formed or rolled according to standard procedures.

1 1 1

## SPECIAL PALLET INCREASES DRUM STORAGE CAPACITY

A special pallet developed by handling engineers at the East Pittsburgh Westinghouse plant increased storage capacity of an outside drum storage area 100% by making it possible to fork truck the drums and stack them four-high in the yard.

Large enough to carry four drums at one time, the pallets are built with narrow wood stringers running lengthwise to keep the drums securely in place. As drums are unloaded from boxcars, they are rolled onto these pallets and taken by fork truck to storage.

Formerly the drums were dumped out of rail cars onto mats, then rolled on planking to the storage area. Because they couldn't use a truck for the stacking job, laborers were able to stack the drums just two-high. Now the truck makes four-high stacking a cinch.

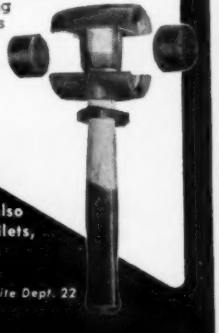

UNEQUALLED
for safe, hard blows

C/R
JAW-HEAD

A perfectly balanced tool. Tough, resilient water buffalo rawhide faces deliver needed power, yet protect fine finishes and delicate parts. Faces quickly and easily replaceable. Safety-Flare handle gives comfortable grip and prevents slipping. When you need a "soft" hammer, make sure it's a C/R *Rawhide* Jaw-head.

**FACES REPLACED IN SECONDS**

Merely loosening a nut releases jaws for replacing faces. When nut is tightened, faces are held in a vise-like grip.



• Available from leading industrial suppliers. Also C/R Rawhide mallets, mauls, solid head hammers.

*For further information write Dept. 22*

CHICAGO Rawhide MFG. CO.
1301 Elston Ave., Chicago 22, Ill.
*In Canada: Super Oil Seal Mfg. Co., Ltd., Hamilton, Ontario*

# WIRE ROPE, too, resists attack with the RIGHT KIND of muscle

Brawny chest and shoulder muscles make the gorilla a formidable foe in the eternal warfare of the jungle. Defending himself and his family, this 450-pound heavyweight stands erect and fights back with sledge-hammer blows of his mighty forearms.

In wire rope, too, it takes the right kind of muscle to resist constant attack of abrasion, corrosion, bending fatigue, load strain and shock stress.

Complete quality control of Wickwire Rope means that you can always count on the right grade of steel and size of wire; the right construction and lay of the rope for best results on your particular job.

See your Wickwire Rope distributor or contact our nearest sales office.

THE COLORADO FUEL AND IRON CORPORATION — Abilene (Tex.) • Denver • Houston • Odessa (Tex.) • Phoenix • Salt Lake City • Tulsa

THE CALIFORNIA WIRE CLOTH CORPORATION — Los Angeles • Oakland • Portland • San Francisco • Seattle • Spokane

WICKWIRE SPENCER STEEL DIVISION — Boston • Buffalo • Chattanooga • Chicago • Detroit • Emlenton (Pa.) • New York • Philadelphia

1221

*A YELLOW TRIANGLE ON THE REEL IDENTIFIES WICKWIRE ROPE*

**WICKWIRE ROPE**

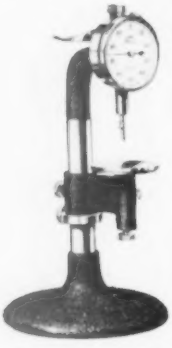
CF&I

PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

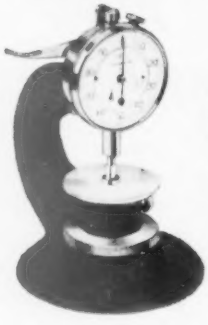
# FOR *Strictly* IMPERSONAL INSPECTION CHOOSE AMES DIAL COMPARATORS

Ames Dial Comparators make the inspection of duplicate parts an extremely simple, rapid and accurate operation. Ames Comparators are strictly impersonal in their accuracy — the results being in no way dependent on the skill or judgment of the operator. The pressure of the gauging members against the work is mechanically determined and therefore uniform.

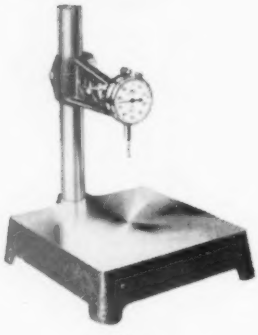
Check the Ames Dial Comparators shown — one of them may solve a Quality Control problem for you.



**Ames No. 1** Dial Comparator is an easily adjustable bench model that measures objects up to 2" in cross section. The table bracket may be quickly located and locked in position on the column. The table itself may be further positioned and locked for final fine adjustment. This comparator is designated *Ames No. 1W* when equipped with dead-weight contact pressure and contact area to ASTM specifications for measuring resilient materials, such as rubber, plastics, etc.



**Ames No. 2** Dial Comparator is a compact, stable bench model for measuring non-yielding materials — sheet metal, glass, hard rubber. The 2" diameter table is adjustable to bring pointer to zero. *Ames No. 2W* is similar to the Ames No. 2, but is furnished with dead-weight contact pressure and contact areas to ASTM specifications for checking textiles, plastics, sheet rubber, etc.



**Ames No. 13** Dial Comparator features flat-ground, cast-iron base of ample size for using V-blocks and locating fixtures for checking rounds, flats and odd shapes. Also, the No. 13 can be fitted with a fine adjustment for close setting. Accurately adjustable bracket holds any Ames Micrometer Dial Indicator.

**Ames No. 130** Dial Comparator is designed especially for inspecting comparatively large parts. For this reason, the flat-ground steel base, the adjustable indicator support on which can be mounted any Ames Micrometer Dial Indicator, and the upright column are proportioned to suit the user's particular requirements.

***Send us your Quality Control job specifications, and we will supply complete details and proposal without obligation.***

*Representatives in principal cities.* **B. C. AMES CO.** *31 Ames Street Waltham 54, Mass.*

Mfgr. of Micrometer Dial Gauges • Micrometer Dial Indicators


## INDUSTRIAL VENTILATING FAN MADE ENTIRELY OF PLASTIC

The accompanying illustration shows large industrial ventilating fan made entirely of unplasticized, hard polyvinyl chloride material known as Lucoflex, exhibited by American Lucoflex Inc. at the recent Chemical Exposition in Chicago. Even the blades are made of the plastic. The fan is lightweight and

requires a minimum of support. The plastic is said to retain its original toughness through any chemical atmosphere without cracking or aging. The plastic is available as a bulk resin which may be compression and transfer molded and extruded, and also in the form of sheets, rods and tubes which may be machined, formed, welded and cemented. It is translucent in thin sections, and opaque in thick sections. Its specific gravity is about 1.4 and it is free of taste, odor and toxicity.

* * *

## 1953 PLANT MAINTENANCE SHOW CLEVELAND, JANUARY 19-22

The Plant Maintenance Show, attended each year by top executives of virtually every industry, has been scheduled for the Public Auditorium in Cleveland in 1953, it was announced by Clapp & Poliak, Inc., New York, which conducts the exposition. The dates are Jan. 19 to 22, inclusive.

The show, which developed from new management techniques in preventive maintenance, has risen in three years to one of the nation's foremost industrial expositions. Experts from all parts of the world attend.

The 1953 show will be almost 75 per cent larger than its 1952 counterpart. Exhibits will cover a gross area of 110,000 square feet. Compared to the first show in 1950, it will have almost four times as many exhibiting companies and cover about six times as much area. At least three copanies, General Electric Co., Westinghouse Electric Corp. and Clark Equipent Co., each will have displays covering three thousand square feet. Three hundred and fifty other companies are expected to conduct exhibits.

The Plant Maintenance Conference, conducted by Clapp & Poliak during the first three days of the show, also will be held. The conference broke all atten-

(*Please turn to page* 256)

# STILL THE ALL-AMERICAN FIRST

Master Gearmotors have given more millions of hours of satisfactory service in the field than all other makes . . . COMBINED.

MASTER GEARMOTORS

THE MASTER ELECTRIC COMPANY · DAYTON 1, OHIO

Advertisement

# ELECTROMET Data Sheet

Published by Electro Metallurgical Company, A Division of Union Carbide and Carbon Corporation, 30 East 42nd Street, New York 17, N. Y. In Canada: Electro Metallurgical Company of Canada, Limited, Welland, Ontario.

## ALLOYS FOR THE STEEL, IRON, AND NON-FERROUS INDUSTRIES

| PRODUCT* | NOMINAL COMPOSITION | USES |
|---|---|---|
| **BORON ALLOYS** | | |
| **Ferroboron** Min. 10.00% Boron Grade | Silicon.....max. 1.50%<br>Aluminum.....max. 0.50%<br>Carbon.....max. 1.50% | Increases hardenability of steel; also, for additions to malleable iron and aluminum alloys. |
| Min. 17.50% Boron Grade | Silicon.....max. 1.50%<br>Aluminum....max. 0.50%<br>Carbon.....max. 0.50% | |
| **Manganese-Boron** | Boron.....min. 17.50%<br>Manganese...approx. 75%<br>Silicon.....max. 1.50%<br>Carbon.....max. 3%<br>Iron.....max. 5% | Used to cleanse and deoxidize non-ferrous alloys. |
| **Nickel-Boron** | Boron.....15 to 18%<br>Silicon.....max. 1.50%<br>Aluminum.....max. 1.00%<br>Carbon.....max. 0.50%<br>Iron.....max. 3.00%<br>Nickel.....Balance | Special boron alloy used principally for deoxidizing nickel and its alloys. |
| **Boron Carbide** | Boron.....45 to 50%<br>Carbon .....45 to 50% | Deoxidizer for non-ferrous alloys. |
| **Calcium Boride** | Boron.....38 to 42%<br>Calcium.....27 to 32%<br>Carbon.....15 to 20% | Welding rod coating. |
| **CALCIUM ALLOYS** | | |
| **Calcium-Silicon** | Calcium.....30 to 33%<br>Silicon.....60 to 65%<br>Iron.....1.50 to 3% | Deoxidizer for quality ingot steel. Also used in high-tensile gray irons. |
| **Calcium-Manganese-Silicon** | Calcium.....16 to 20%<br>Manganese.....14 to 18%<br>Silicon.....53 to 59% | A complex deoxidizer used widely in production of steel castings. |
| **Calcium Metal** | | Reducing agent in metallurgical applications, deoxidizer and degasifier for non-ferrous metals, particularly magnesium. |
| Regular Grade | Calcium.....98%<br>(Cylinders, Slabs, Cut Pieces, or Turnings) | |
| Distilled Grade | Calcium...approx. 99.90%<br>(Irregular pieces from pea size to 14 in. lumps) | For special applications requiring calcium of very high purity. |
| **CHROMIUM ALLOYS** | | |
| **Low-Carbon Ferrochrome** | Chromium.....67 to 71%<br>Silicon.....0.30 to 1.00%<br>Carbon (10 Grades)<br>max. 0.03 to max. 2.00% | Production of stainless steels and high-temperature alloys requiring low carbon content. |
| **High-Carbon Ferrochrome** | | |
| Max. 4.50, 5.00, or 6.00% Carbon Grade | Chromium.....67 to 70%<br>Silicon..... 1 to 2% | For production of engineering alloy steels and other alloy steels of moderate chromium content. |
| Max. 7.00% Carbon Grade | Chromium.....66 to 69%<br>Silicon..... 1 to 3% | |
| Min. 7.00% Carbon Grade | Chromium.....65 to 68%<br>Silicon..... 1 to 3% | |
| **Nitrogen-Bearing Low-Carbon Ferrochrome** | Chromium.....67 to 71%<br>Silicon.....0.30 to 1.00%<br>Carbon.....max. 0.10%<br>Nitrogen....approx. 0.75% | For additions of nitrogen to improve properties of high-chromium steels. |
| **"SM" Ferrochrome** | Chromium.....60 to 65%<br>Silicon ..... 4 to 6%<br>Carbon..... 4 to 6%<br>Manganese..... 4 to 6% | A high-solubility chromium addition for steel or iron in either furnace or ladle. |
| **Exothermic Ferrochrome** | Chromium....60% approx.<br>Carbon.....4.5% max. | An improved exothermic ladle alloy with high solubility, low carbon pickup, and high ignition temperature. |
| **Exothermic Silicon-Chrome** | Chromium... 46% approx.<br>Silicon..... 23% approx.<br>Carbon.....1.00% max. | An improved exothermic ladle alloy with high solubility, very low carbon pickup, and high ignition temperature. |

| PRODUCT* | NOMINAL COMPOSITION | USES |
|---|---|---|
| **CHROMIUM ALLOYS cont.** | | |
| **Foundry Ferrochrome** High-Carbon Grade | Chromium.....62 to 66%<br>Silicon..... 7 to 10%<br>Carbon..... 5 to 7% | Developed especially for high-solubility ladle additions of chromium to improve composition and properties of cast iron. |
| Low-Carbon Grade | Chromium.....50 to 54%<br>Silicon.....28 to 32%<br>Carbon.....max. 1.25% | |
| **Chromium Metal** Low-Carbon Grades | Chromium.....min. 97%<br>Carbon .....max. 0.10% and 0.50%<br>Iron.....max. 1% | Production of wide variety of non-ferrous chromium-bearing alloys, including electrical resistance alloys and high-temperature alloys. |
| High-Carbon Grade | Chromium.....87 to 90%<br>Carbon..... 9 to 11%<br>Iron.....max. 1.25% | |
| **"EM" Ferrochrome-Silicon** No. 1 Grade | Chromium.....39 to 41%<br>Silicon.....42 to 46%<br>Carbon.....max. 0.05% | In production of stainless steels, these alloys are used to reduce metal oxides from the slag back into bath. |
| No. 2 Grade | Chromium.....36 to 39%<br>Silicon.....36 to 39%<br>Carbon.....max. 0.05%<br>Aluminum..... 7 to 9% | |
| **"EM" Ferrosilicon-Chrome** | Chromium.....50 to 54%<br>Silicon.....28 to 32%<br>Carbon.....max. 1.25% | For adding chromium and silicon to steels containing up to 1 or 2 per cent chromium. |
| **"EM" Chromium Briquets** (Hexagonal Shape) | Chromium.....2 lb.<br>Total Weight.....3¾ lb. | For adding chromium to cast iron in the cupola. |
| **COLUMBIUM ALLOYS** | | |
| **Ferrocolumbium** | Columbium.....50 to 60%<br>Silicon.....max. 8%<br>Carbon.....max. 0.40% | Stabilizer in austenitic chromium-nickel stainless steels. Also constituent of high-temperature alloys. |
| **Ferrotantalum-Columbium** | Columbium...approx. 40%<br>Tantalum.....approx. 20%<br>Cb+Ta .....min. 60%<br>Silicon.....4 to 6%<br>Carbon.....max. 0.30% | Another stabilizer, used to supplement ferrocolumbium, in austenitic chromium-nickel stainless steels. Also used in high-temperature alloys. |
| **MANGANESE ALLOYS** | | |
| **Standard Ferromanganese** Regular Grade | Manganese.....78 to 82%<br>Carbon.....approx. 7%<br>Silicon.....max. 1% | Most common means of adding manganese to steel for both alloying and deoxidizing purposes. Also for counteracting sulphur in steel and cast iron. |
| Low-Phosphorus Grade | Manganese.....78 to 82%<br>Carbon.....max. 7%<br>Silicon.....max. 2%<br>Phosphorus...max. 0.10% | |
| **Low-Carbon Ferromanganese** Low-Phosphorus Grade | Manganese.....min. 90%<br>Carbon.....max. 0.07%<br>Phosphorus...max. 0.06% | Additions of manganese to steels of low-carbon specification, particularly stainless steels of 18 per cent chromium, 8 per cent nickel type. |
| Regular Grades | Manganese.....85 to 90%<br>Carbon....max. 0.07, 0.11 to 0.15, 0.30, or 0.50% | |
| Regular Grade (High-Silicon) | Manganese.....80 to 85%<br>Carbon.....max. 0.75%<br>Silicon..... 5 to 7% | |
| **Medium-Carbon Ferromanganese** | Manganese.....80 to 85%<br>Carbon.....max. 1.25 to 1.50% | For making low- and medium-carbon manganese steel and Hadfield steel. |
| **Silicomanganese** | | |
| Max. 1.50% Carbon Grade | Manganese.....65 to 68%<br>Silicon.....18 to 20% | A versatile alloy useful as furnace block, deoxidizer, and also for making manganese additions to steel in the ladle or in the furnace. |
| Max. 2.00% Carbon Grade | Manganese.....65 to 68%<br>Silicon.....15 to 17.50% | |
| Max. 3.00% Carbon Grade | Manganese.....65 to 68%<br>Silicon.....12 to 14.50% | |

*All of the alloys and metals listed are produced in the usual lump, crushed, or ground sizes, except where other special forms are indicated.

| PRODUCT* | NOMINAL COMPOSITION | USES |
|---|---|---|
| **MANGANESE ALLOYS cont.** | | |
| **Low-Iron Ferromanganese** | Manganese.....85 to 90%<br>Carbon.....approx. 7.00%<br>Silicon.....max. 3%<br>Iron.....max. 2% | For high manganese additions to certain non-ferrous alloys, particularly aluminum. |
| **Manganese Metal** | Manganese.....min. 96%<br>Carbon.....max. 0.20%<br>Silicon.....max. 1.00%<br>Iron.....max. 2.50% | Used both as deoxidizer and alloy in production of numerous non-ferrous metals and alloys. |
| **"EM" Silico-manganese Briquets** (Square Shape) | Manganese.....2 lb.<br>Silicon.....½ lb.<br>Total Weight.....3½ lb. | For adding manganese (with silicon) to cast iron in the cupola. |
| **"EM" Ferro-manganese Briquets** (Oblong Shape) | Manganese.....2 lb.<br>Total Weight.....3 lb. | For adding manganese (without silicon) to cast iron in the cupola. |
| **SILICON ALLOYS** | | |
| **50% Ferrosilicon** | | |
| Regular Grade | Silicon.....47 to 51% | Deoxidizer for most grades of killed or semi-killed steel. Blocking grade specially sized for maximum efficiency. |
| Blocking Grade | Silicon.....47 to 51% | |
| Low-Aluminum Grade | Silicon.....47 to 51%<br>Aluminum.....max. 0.40% | |
| **65% Ferrosilicon** | | |
| Regular Grade | Silicon.....65 to 70% | For furnace or ladle addition to carbon and alloy steels. |
| Low-Aluminum Grade | Silicon....61.50 to 66.50%<br>Aluminum.....max. 0.50% | Mainly for production of electrical sheet steel. |
| **75% Ferrosilicon** | | Deoxidizer and alloy for production of high-silicon spring and electrical sheet steel. Graphitizing inoculant for cast iron. |
| Regular Grade | Silicon.....73 to 78% | |
| Low-Aluminum Grade | Silicon.....73 to 78%<br>Aluminum.....max. 0.50% | |
| **85% Ferrosilicon** | | Enables melter to add higher percentages of silicon without chilling metal in ladle. Graphitizing inoculant for cast iron. |
| Regular Grade | Silicon.....83 to 88% | |
| Low-Aluminum Grade | Silicon.....83 to 88%<br>Aluminum.....max. 0.50% | |
| **90% Ferrosilicon** | | Permits large additions of silicon without harmful chilling effect. |
| Regular Grade | Silicon.....92 to 95% | |
| Low-Aluminum Grade | Silicon.....92 to 95%<br>Aluminum.....max. 0.50% | |
| **Silicon Metal** | | Additions of silicon to non-ferrous metals, particularly aluminum and copper, to improve physical properties. |
| Regular Grade | Silicon.....min. 97 or 96%<br>Iron.....max. 1 or 2% | |
| Purified Grade | Silicon....99.70 to 99.90%<br>Iron.....005 to .015% | For applications in non-ferrous industry requiring silicon of high purity. |
| Low-Calcium Grade | Silicon.....min. 97%<br>Iron.....max. 1%<br>Calcium.....max. 0.10% | For the production of high-silicon aluminum alloys where calcium is detrimental. |
| Low-Aluminum Grade | Silicon.....min. 98%<br>Iron.....max. 1%<br>Aluminum.....max. 0.10% | For the production of silicon-copper alloys where aluminum is detrimental. |
| **"SMZ" Alloy** | Silicon.....60 to 65%<br>Manganese..... 5 to 7%<br>Zirconium..... 5 to 7% | Particularly strong graphitizing inoculant used in making ladle additions to cast iron. |
| **Special Graphitizer** | Ferrosilicon Compound | Deoxidizer and graphitizer for cast iron. |
| **Magnesium-Ferrosilicon** | Silicon.....approx. 46%<br>Magnesium..approx. 8.5% | For ladle addition to cast iron to obtain special properties. |
| **Barium-Silicon** | Barium.....40 to 50%<br>Silicon.....45 to 55% | For deoxidation of non-ferrous alloys. |
| **"EM" Silicon Briquets** (Cylindrical Shape) | | |
| Large Size | Silicon.....2 lb.<br>Total Weight.....5 lb. | For adding silicon to cast iron in the cupola. |
| Small Size | Silicon.....1 lb.<br>Total Weight.....2½ lb. | |

"Electromet," "EM," "SM," and "SMZ," are trade-marks of Union Carbide and Carbon Corporation.

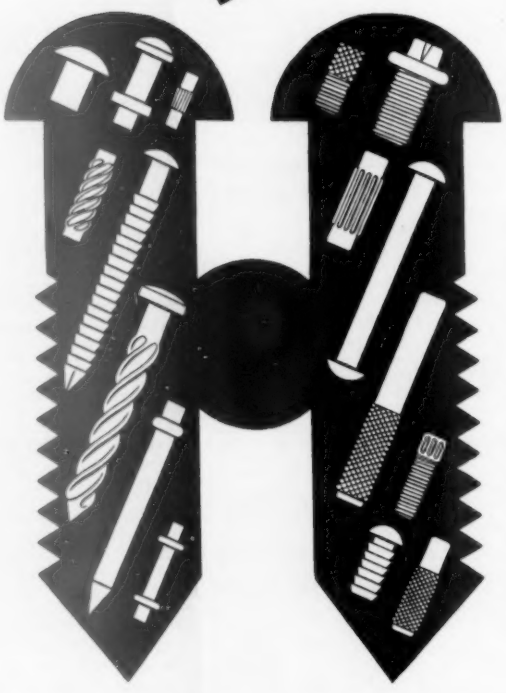
| PRODUCT* | NOMINAL COMPOSITION | USES |
|---|---|---|
| **TITANIUM ALLOYS** | | |
| **Ferrotitanium** | Titanium.....27 to 32%<br>Carbon .....max. 0.10% | For stabilized austenitic stainless steels and high-temperature metals. |
| **Silicon-Titanium** | Titanium.....40 to 50%<br>Silicon.....45 to 50%<br>Iron.....max. 3% | For additions of titanium to steels or non-ferrous alloys. |
| **Manganese-Nickel-Titanium** | Titanium.....43 to 48%<br>Nickel.....approx. 25%<br>Manganese.....max. 8% | Deoxidization of nickel alloys. |
| **TUNGSTEN ALLOYS** | | |
| **Ferrotungsten** | Conforming to A.S.T.M. Spec. A 144-39 | For production of tool and die steels; also high-temperature alloys. |
| **Tungsten Metal Powder** | | Production of tungsten steels and cast tungsten carbide. |
| Melting Grade | Tungsten.....min. 98.80%<br>Total Carbon..max. 0.25% | |
| **Calcium Tungstate** | Tungstic Oxide..68 to 72% | For making tungsten chemicals and other tungsten products. |
| **Calcium Tungstate Nuggets** | Tungstic Oxide..68 to 72% | Making tool steels and high-temperature alloys by direct reduction. |
| **Ammonium Paratungstate** | Tungstic Oxide.min. 88.7% | Intermediate for tungsten products. |
| **VANADIUM ALLOYS** | | |
| **Ferrovanadium** | Vanadium.....50 to 55%<br>Carbon....max. 0.20, 0.50, or 3.00%<br>Silicon....max. 1.50, 2.00, or 8% | Production of tool and engineering steels, high-strength structural steels, non-aging rimming steels, and wear-resistant irons. |
| **Vanadium Oxide Fused** | $V_2O_5$.....86 to 89%<br>$Na_2O$.....approx. 10%<br>CaO.....approx. 2% | For addition of vanadium to steel and for manufacturing catalysts. |
| Sodium Polyvanadate (Red Cake) | $V_2O_5$.....approx. 85%<br>$Na_2O$.....approx. 9%<br>CaO.....approx. 2%<br>$H_2O$.....approx. 2.5% | For manufacture of vanadium compounds, including vanadium catalysts. |
| High-Purity Ammonium Metavanadate | $V_2O_5$.....approx. 99.50%<br>$NH_4VO_3$.....min. 99% | |
| **ZIRCONIUM ALLOYS** | | |
| **12 to 15% Zirconium Alloy** | Zirconium.....12 to 15%<br>Silicon.....39 to 43%<br>Carbon.....max. 0.20% | This is a powerful deoxidizer. It also increases depth of hardening. |
| **35 to 40% Zirconium Alloy** | Zirconium.....35 to 40%<br>Silicon.....47 to 52%<br>Carbon.....max. 0.50% | Deoxidizer for fine grades of alloy steels. Used for adding larger amounts of zirconium. |
| **Nickel-Zirconium** | Zirconium.....25 to 30%<br>Nickel.....40 to 50% | For deoxidizing and degasifying nickel alloys. |

## IF YOU HAVE A METALS PROBLEM

More than 50 different alloys and metals are produced by ELECTROMET in hundreds of varying compositions and sizes. If you need help in selecting the proper alloys, or have some specific metallurgical problem, be sure to consult one of ELECTROMET'S specially trained metallurgists and engineers. Address your inquiries to one of the offices listed below.

Birmingham 3, Ala.....Brown-Marx Building
Chicago 1, Ill.....230 N. Michigan Avenue
Cleveland 14, Ohio.....Union Commerce Building
Detroit 2, Mich.....6-240 General Motors Building
Houston 11, Texas.....6119 Harrisburg Boulevard
Los Angeles 58, Calif.....2770 Leonis Boulevard
New York 17, N. Y.....30 East 42nd Street
Pittsburgh 22, Pa.....2207 Oliver Building
San Francisco 6, Calif.....22 Battery Street
In Canada: Electro Metallurgical Company of Canada Limited, Welland, Ontario

HASSALL SERVICE



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**Spiral Bevel**
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*Reg. U. S. Pat. Off.

**THE CINCINNATI GEAR COMPANY**
*"Gears . . . Good Gears Only"*
Wooster Pike and Mariemont Ave. • Cincinnati 27, Ohio

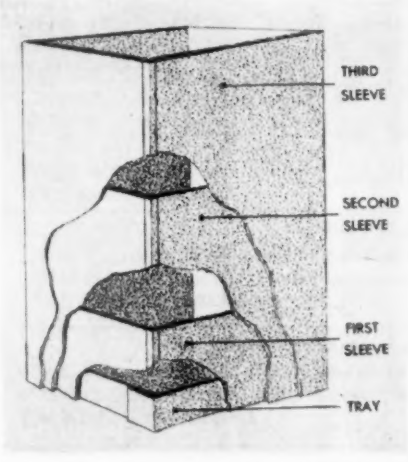
(*Continued from page 252*)

dance records for this type of gathering in Philadelphia earlier this year.

Advance registration cards may be obtained from Clapp & Poliak, Inc., 341 Madison Ave., New York 17, N. Y.

## NEW TYPE CORRUGATED CONTAINER HOLDS TON OF RUBBER BALES

Up to 32 bales of synthetic rubber, each weighing 75 pounds, are being combined into a compact unit load by the use of a new corrugated shipping container developed by the Gaylord Container Corporation. Previously each bale was packaged in a multi-wall bag, and 21 of these bags were arranged so that the entire load could be handled by a lift truck though not actually palletized.

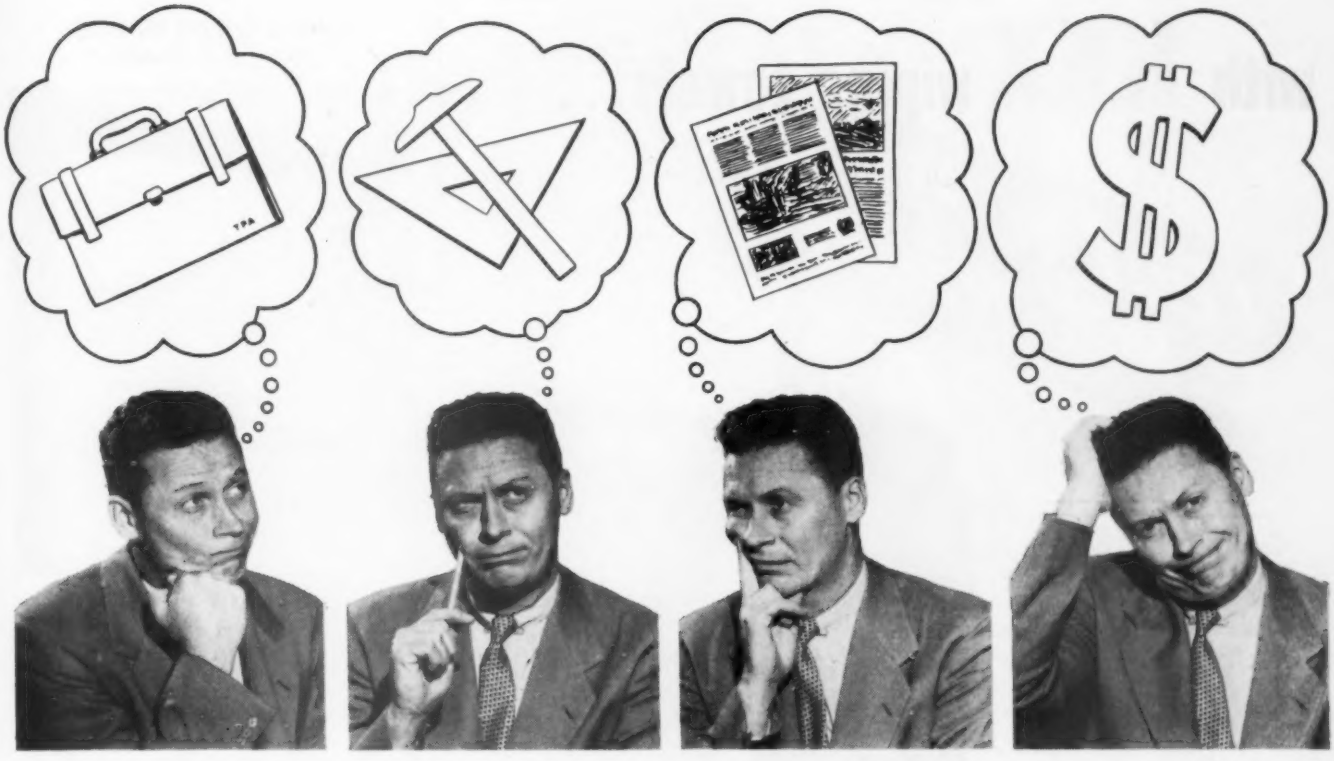



Cut-away view of the new rubber box.

The new "package" increases the weight per unit load and adds to its height, thus reducing the floor area per unit. An over-all lower packaging cost results from simplified storage handling plus improved loading and unloading of freight cars. The container is 100% corrugated board and requires no reinforcing tapes or steel strapping and wire, that might result in damage to machinery in the users' rubber room.

The principle of the package involves the use of a single base tray held in position by a sleeve. When the base tray is filled with bales of rubber, a second sleeve higher than the first is slipped over the sides. This gives an extra wall to the container and provides space for more bales. A third sleeve is finally added and bales stacked inside to capacity. Thus the greatest amount of container strength is developed where internal pressure by the contents is greatest. At the bottom, where the pressure of the cold flow rubber is at its maximum, the container has four walls. At the top where pressure is least, a single wall is provided.

An ordinary blade type of fork will slip under a filled container. No manual handling is required to develop the maximum carloading factor, and users report savings of about 20 man-hours in unloading a single car.



# Why a top P. A. has to think with four heads

LOOKING for value in the component parts he buys, a top P. A. thinks about four things before making a decision . . .

**QUALITY.** He knows that his company's product is easier to sell when it has top quality component parts.

**SERVICE.** By buying from a manufacturer who offers the most complete engineering service, he knows he can supplement his own company's engineering skill.

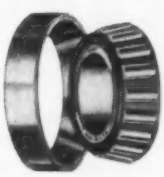
**PUBLIC ACCEPTANCE.** He knows the advantage of using component parts that are well-advertised, have earned public acceptance.

**PRICE.** And because he's a buyer, he's aware of price.

All four factors—quality, service, public acceptance, price—make up true value. And top P.A.'s know that price alone is outweighed by the three other factors, as this simple formula shows:

$$Value = \frac{quality + service + public\ acceptance}{price}$$

In tapered roller bearings, the name "Timken"® means value. That's because Timken bearings assure you of the highest quality, the most extensive service support and the widest public acceptance (See P.A. Notes). The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ont. Cable address: "TIMROSCO".



**TIMKEN**

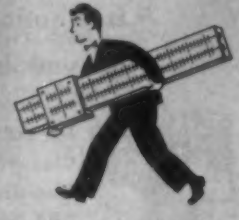
TRADE-MARK REG. U. S. PAT. OFF.

*TAPERED ROLLER BEARINGS*

## P. A. Notes:

**MEASURES BUMPS TO .000001".** This instrument, called a profilograph, measures surface variations to within one-millionth of an inch. Developed by the Timken Company, it has helped make possible the microscopic accuracy of Timken bearings.

**RULE TO REMEMBER.** When you've got a bearing or assembly problem, call the Timken Company. More than 100 engineers backed by more than 50 years of experience wait to help you with bearing application problems.



**REGISTERS ON READERS.** One big reason for the big acceptance of Timken bearings is an advertising program that makes an estimated 688,000,000 reader impressions every year—gives your Timken bearing-equipped product extra sales appeal.

NOT JUST A BALL ◯ NOT JUST A ROLLER ▭ THE TIMKEN TAPERED ROLLER ▭ BEARING TAKES RADIAL ◎ AND THRUST →◎← LOADS OR ANY COMBINATION ✳

# with KEX wiping towels...

## Because Every Square Inch is Usable—and KEX Industrial Wiping Towel Rental Service...

- Is more economical
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- Simplifies handling
- Saves man hours
- Better equips our men
- Relieves me of shopping around
- Is a national service I can depend on
- Is available to *all* my plants

***For complete information see your Classified Telephone Directory for nearest Kex distributor, or write Kex National Service, 295 Fifth Avenue, New York 16, N. Y.***

## "KEX" NATIONAL SERVICE

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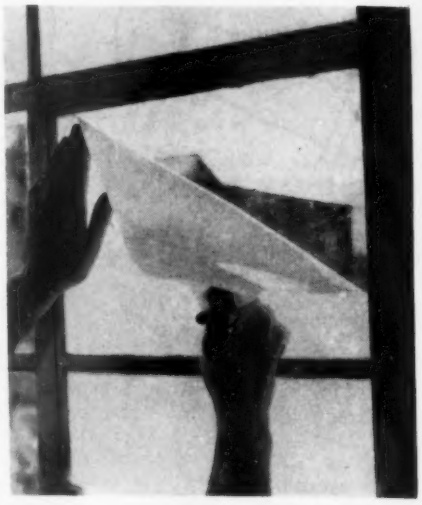
"KEX" REG. U.S. PAT. OFF. NATIONAL SERVICE A CALLAWAY MILLS PRODUCT INDUSTRIAL WIPING CLOTHS

***It isn't Kex unless it's imprinted with the Kex name***


### PLASTIC SHADE REDUCES WINDOW GLARE



The accompanying illustration shows the application of a new type shade of Vinylite plastic sheeting made by Transeal, Ltd., 821 North Ave., Plainfield, N. J., which admits sunlight without glare. The shade is easily applied, easily cleaned, easily removed and reuseable. Cut to windowpane size, the plastic sheet is applied by wetting the glass, and squeegeeing out the water. Washable on or off the window, the shade needs only to be rinsed in warm water to restore adhesiveness before reuse. Custom cut, the shades come in eight colors from frosted translucent to blackout black.

◆ ◆ ◆

### TEST NEW TYPE TILE FLOOR AT FOREST PRODUCTS LABORATORY

A new type floor tile with hard, scuff-resistant surface has been laid experimentally on the lobby floor at the U. S. Forest Products Laboratory, Madison, Wis. The plywood floor tiling is surfaced with a thin sheet created by impregnating numerous sheets of paper with Bakelite phenolic resins and pressing them together under high temperatures. Developed by the Laboratory during World War II as a substitute for scarce sheet metals, this Bakelite phenolic resin-impregnated paper, called papreg, is used for airplane parts such as gunners' seats and turrets, wing tips and flooring.

Hardness and high moisture resistance of papreg are due to the phenolic resins; its strength, to the paper component. Layers of papreg are glued to the top and bottom of five-ply Douglas fir plywood panels to obtain a balanced structure resistant to warping. The panels are

(*Please turn to page* 260)

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You need this up-to-the-minute 56-page edition of Bristol's famous book if you're involved with thermocouples and pyrometers of any kind. It's free for the asking. Here's what you get in its three, fact-packed sections . . .

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Ansul Dry Chemical Fire Extinguishing Equipment has world-wide recognition as preferred protection for flammable liquid, gas and electrical hazards. Yet a surprising number of Ansul Extinguishers are used to protect textile mills and paper mills against serious loss from surface fires such as occur in textile lint and combustible paper dust.

The textile and paper making industries rely on Ansul Extinguishers for quick control of dangerous flash fires in class "A" (ordinary combustible) materials. Any remaining embers are quenched with small quantities of water, thereby keeping water damage at a minimum.

Surface fires in textile lint and combustible dusts spread rapidly. They need quick control. If you have serious lint or dust hazards, talk with your Ansul representative. He may have suggestions to reduce fire damage and lost production time.

ANSUL MODEL 20-B

Send for File No. 941. You will receive a variety of helpful printed matter. Included is our latest catalog which describes Ansul Extinguishers of all sizes — from the small Ansul Model 4 to Ansul Piped systems and Ansul 2000 lb. Stationary Units.

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ALSO MANUFACTURERS OF INDUSTRIAL CHEMICALS, REFRIGERANTS AND REFRIGERATION PRODUCTS

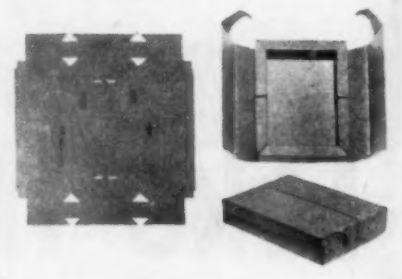
(*Continued from page* 258)

cut into 10½-inch square tiles and fitted with tongue-and-groove joints.

More than 1,500 square feet of tile was laid in an attractive checkerboard pattern of light brown and Forest Service green on the lobby floor. Experience indicates that nothing more than conventional cleaning will be necessary to preserve the natural luster. Because phenolic resin is present throughout the papreg surface, the finish in a natural colored sheet will not wear off as it does from a varnished floor.

An experimental office floor of natural papreg-surfaced plywood was laid at the Laboratory in 1945. In seven years of almost daily use, it has maintained a smooth, lustrous surface.

## NEW MAILING BOX DOES NOT REQUIRE SEALING



A new development in box construction which provides four-way protection for the mailing of books and other products, features exceptional cushioning qualities, and requires no sealing, according to the Shelton Manufacturing Co., Inc., Newark 5, N. J. The use of tubular walls that in turn have additional strength by the wrapping of still another layer of corrugation when closed is said to afford complete protection to contents. Made of double face corrugated, through a series of scores and cut-outs the box quickly folds and remains securely closed, yet can be inspected by postal authorities as required for third class mailing.

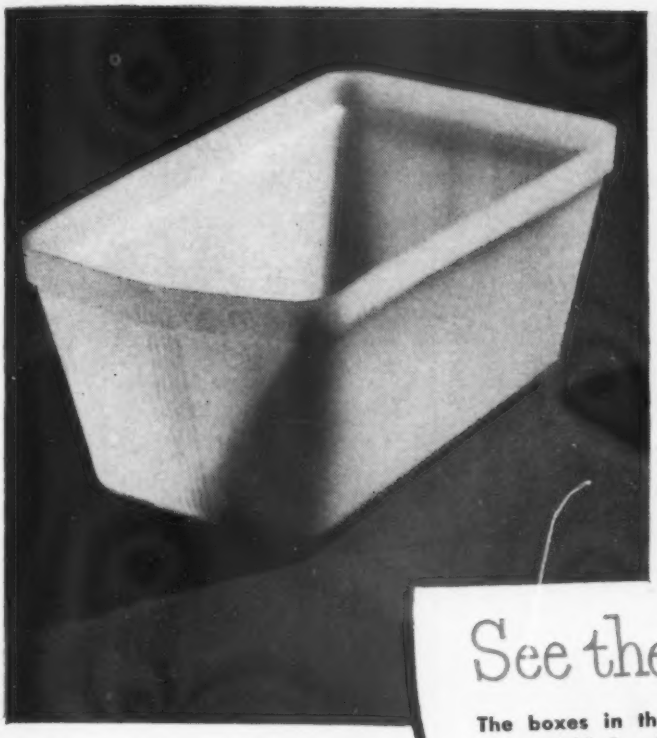
## RESIN INSULATION WEIGHS HALF POUND PER CU. FT.

From the Research Laboratories, three years ago, came a new substance—the lightest solid in the world. It was a foamed-resin insulation, called Insulfoam, that in its lightest varieties weighed as little as one half pound per cubic foot, or about one tenth that of balsa wood or only six times that of air.

The object its creators had in mind was a lightweight thermal insulation, such as might be used in appliances. These uses have not materialized, not yet anyway. But other possibilities have appeared.

*For Sea*—One is a buoying material for vessels. The ingredients for Insulfoam are liquids and can be inserted into the hull spaces to be filled. The material

(*Please turn to page* 264)



## See the difference!

**The boxes in these unretouched photographs were molded under the same conditions and exposed to a temperature of 212°F. The box on the left, made from Koppers MC 409, showed little or no distortion after 30 minutes at this temperature. The box on the right, made from a widely used commercial modified polystyrene, showed major distortion within 10 minutes.**

# high heat resistance in a modified polystyrene...

# KOPPERS MC 409

• Here's the high-heat modified polystyrene that the industry has long wanted . . . Koppers MC 409.

This new material combines three important advantages . . . higher heat resistance *(up to 198°F.*)* . . . the toughness and shock resistance of modified polystyrene . . . and the desirable finish and molding characteristics of regular polystyrene. MC 409's excellent heat resistance is comparable to that of Koppers well known Polystyrene 8.

These qualities make MC 409 an ideal material for radio cabinets, battery cases, washing machine and refrigerator parts, toys, housewares, brush handles and, in fact, any molded or extruded polystyrene product subjected to heat.

Koppers MC 409 makes possible sturdy, shock resistant, plastic products that withstand the high temperatures found in show windows, dishwashers and automobiles, where other modified polystyrenes sag and shrink. Tests prove that on exposure to boiling water MC 409 will show low deformation with a minimum of shrinkage.

**FOR FREE SAMPLES** for testing in your laboratory and for Technical Bulletin C-2-161-TR describing the properties and characteristics of MC 409, write, wire or phone Koppers Company, Inc., Chemical Division, Dept. P-112, Pittsburgh 19, Pa.

**A.S.T.M. D-648-45T.*

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*Koppers Plastics Make Many Products Better and Many Better Products Possible*

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**KOPPERS COMPANY, INC., Chemical Division, Dept. P-112, PITTSBURGH 19, PA.**

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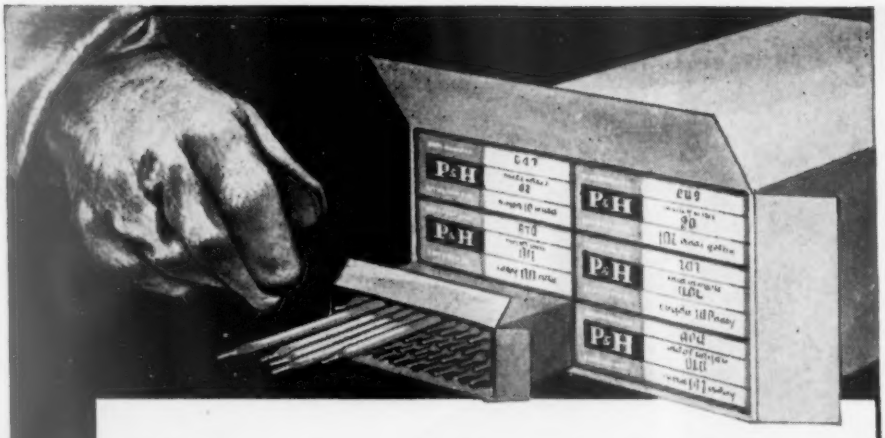


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***— an assortment of electrodes to meet every emergency!***

# NEW P&H Maintenance Pack

At your fingertips — an assortment of five different kinds of rods for repair and maintenance welding. Packaged to stay dry — clearly identified to make selection easy.

With the P&H Maintenance Pack, you no longer have to buy seldom-used rods in quantities larger than you need. Instead, in one convenient package, you can keep some of each type on hand — economically!

And you're equipped to do all kinds of jobs — with fast, easy, sound welds. Just look at what the versatile P&H Maintenance Pack gives you:

1. **5 lbs. each AC-3,** 1/8", 5/32", 3/16" — For all position welding of mild steels and sheet metal. Can be used with AC or DC welders.
2. **5 lbs. AC-1,** 5/32" — For mild steels. The most universal electrode yet developed. Unusually easy to handle in any position, with good penetration. AC or DC.
3. **5 lbs. 70LA2,** 5/32" — For welding high-carbon, alloy, high-sulfur, free-machining, cold-rolled, and other hard-to-weld steels. Ideal for steel casting repairs. AC or DC.
4. **1 lb. Harstain,** 1/8" — For spring steels and stainless steels of all kinds. AC or DC.
5. **1 lb. Nicast,** 1/8" — For machinable welds on cast iron. Nicast welds are strong and non-porous.

**$13.50 COMPLETE**

Let the P&H Maintenance Pack save time, trouble, and money for you. Order from your P&H representative or local distributor. Mail coupon for name of one nearest you, and for further information.

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2429


(*Continued from page 260*)

foams to ten or a dozen times the original volume, completely filling the void. The material thus formed provides a buoyant effect of over 55 pounds per cubic foot. Even on immersion under high water pressure it exceeds 40 pounds per cubic foot buoyancy, a value higher than that of materials presently used in this application. Also, a chamber can be filled with Insulfoam in a matter of minutes whereas balsa wood must be laboriously cut and fitted into position and the watertight chamber then welded together with the balsa wood inside. Insulfoam is fungus-proof and fireproof, while balsa wood is both inflammable and subject to fungus attack.

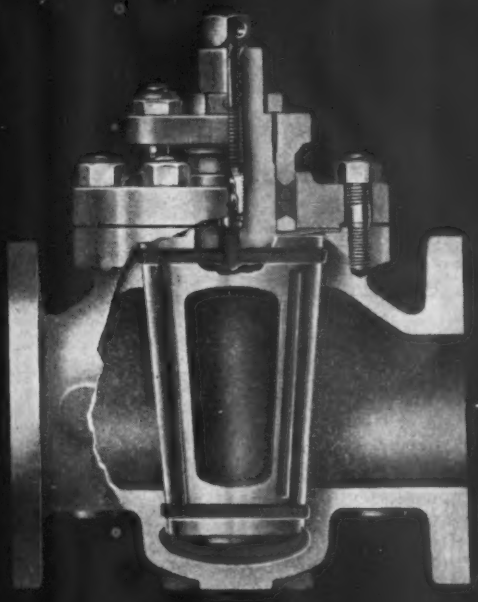
**Insulfoam has a honeycomb structure.**

*For Air*—Insulfoam is being used by the Douglas Aircraft Company in an experimental way thus far, to provide a strong, lightweight, heat-insulating panel for aircraft and allied applications. The Insulfoam is "grown" in a honeycomb structure of paper. This filled cell structure is then sliced to desired thickness and bonded to aluminum sheets. The result is a panel of great strength, weighing about three or four pounds per cubic foot for this foam honeycomb assembly. This process combines the thermal insulation value of Insulfoam with the extremely high strength to weight ratio of honeycomb.

## SERIES OF BOOKLETS ON USE OF STAINLESS STEEL IN KEY INDUSTRIES

A series of seven booklets setting forth stainless steel applications in key industries, each devoted to "Getting the Most out of Stainless Steels" in a particular industry — food processing, dairy, meat processing, brewing, chemical processing, textiles, pulp and paper, has been published by the Crucible Steel Co., Oliver Building, Pittsburgh. The series was awarded the 1952 "Topper" award for sales literature by the National Industrial Advertising Association.

In the preparation of the series, each industry was carefully studied by writers, artists and editors, and the booklets were prepared with copy and illustrations employing the distinctive language and equipment symbols of each industry. It is planned to produce additional books on other industries for the stainless series.



# LUBRICATED PLUG

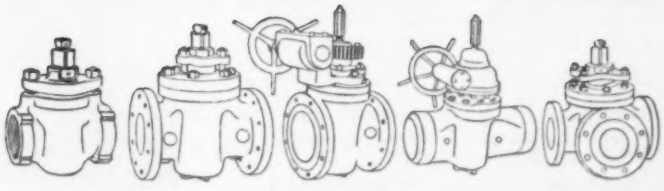
## COMPLETE LINES OF LUBRICATED PLUG VALVES

Because of the wide range of services to which Lubricated Plug Valves can be adapted, they may be classed as "all-purpose" valves. Walworth manufactures complete lines of Lubricated Plug Valves in a variety of types and materials for working pressures up to 5,000 psi and for vacuum services. Sizes range from ½ to 30 inches. Write for descriptive literature.

Walworth also manufactures complete lines of gate, globe, angle, and check valves made of steel, bronze, iron, and special alloys.

Walworth valves, pipe fittings, and pipe wrenches total approximately 50,000 items and are sold through distributors all over the world.

Walworth engineers will be glad to help you with your problems. Call your local Walworth distributor, nearest Walworth sales office, or write to our General Offices, 60 East 42nd Street, New York 17, New York.



**Illustrated in section is a Walworth No. 1700F Regular Gland Type, Wrench Operated, Steeliron, Lubricated Plug Valve. This particular line of valves has a working pressure rating of 200 psi at 150F or 125 psi at 450F. Sizes range from ½ to 8 inches. Other Walworth Lubricated Plug Valves include Single Gland and Ball Bearing types. They are available for a variety of working pressures.**

**For best results use Walworth Lubricants and Walworth High Pressure Lubricant Guns.**

**WALWORTH**

*Manufacturers since 1842*

**valves . . . pipe fittings . . . pipe wrenches**

**60 East 42nd Street, New York 17, N. Y.**

**DISTRIBUTORS IN PRINCIPAL CENTERS THROUGHOUT THE WORLD**

# Personalities IN THE NEWS

**Stephen A. Furbacher** has been appointed Director of Purchases for the Kawneer Company, Niles, Mich. Mr. Furbacher,

**Stephen A. Furbacher**

a graduate of the University of Missouri, came to Kawneer in 1948 as a field salesman. He later was a salesman in the defense procurement department, and subsequently named manager of defense sales.

Edwin C. Witwer, Secretary of the company, will relinquish his duties as Director of Purchases and will devote full time to corporate affairs.

**Henry R. Michel** has been named Director of Purchases of Celanese Corporation of America, New York, N. Y., as noted last month. He assumes all

**Henry R. Michel**

the duties formerly performed by F. W. Paffen, whose full time is now required by procurement activities for Celanese Central, S.A., recently established global organization of the company.

Mr. Michel had been with Westinghouse Electric Corporation since 1920, and at the time of his resignation was Assistant to the Vice President in Charge of Purchasing. From 1938 to 1950 he was Purchasing Agent of the East Pittsburgh works of the company.

**Harold A. Burnip** has been appointed Director of Purchase Engineering for The Lincoln Electric Company of Cleveland, O. In the post, he will be responsible for developing new materials, lower cost substitute materials, establishing purchasing and quality control specifications and either new or improved processes and methods. J. S. Roscoe is Director of Purchasing.

Mr. Burnip has been with Lincoln for the past ten years. In recent years

**Harold A. Burnip**

as project engineer, he supervised the building of Lincoln's new $10,000,000 plant. Prior to that he served as Purchasing Agent for the company. Before his connection with Lincoln, he worked in production managenment and in the supervision of construction projects involving some of the largest power plants along the Atlantic Seaboard.

**Robert N. Huntoon** has been named Director of the Procurement Division of Menasco Manufacturing Company, Burbank, Calif. Mr. Huntoon, formerly Assistant Purchasing Agent, succeeds John Smith, recently resigned as Director of Procurement. Thomas E. Merrick, formerly Supervisor of Material Control, has been promoted to Purchasing Agent.

**Robert W. Daumiller** has been appointed Assistant Purchasing Agent of Townsend Company, New Brighton, Pa. Mr.

**Robert W. Daumiller**

Daumiller joined the company in 1946 as time study analyst. In 1947 he was transferred to production control, where he later headed the department.

**E. H. Weaver,** Manager of Purchases, Union Oil Company of California, Los Angeles, has been awarded a certificate of service by the American Standards Association in recognition of his work in the development of American Standards. Mr. Weaver is a member of the ASA Standards Council, represent- the National Association of Purchasing Agents. He is particularly active in ASA affairs as the N.A.P.A. represen-

**E. H. Weaver**

tative on the Committee on Standardization of Pipe, Flanges and Fittings, B16. Roger E. Gay, President of A.S.A.,

(*Please turn to page* 270)

# *If you're using high-priced quenching oils*

# YOU'RE PROBABLY WASTING MONEY!

Verified reports from a great many heat-treating plants prove conclusively that they have saved money by switching from an expensive quenching oil to a Sun Quenching Oil. In every instance these plants have maintained—or surpassed—their standards of quality through the use of Sun's specially refined naphthenic quenching oils.

These are facts—not idle boasts. If you would like to see field reports giving the details of these plants' quenching operations, and the benefits they obtain, fill in the coupon below.

## *Sun Quenching Oils can handle 95 percent of all quenching jobs*

**1 They cost less.** You save on the purchase price.

**2 They have low drag-out.** When heated they thin out more than paraffinic oils, draining off parts more rapidly. You reduce your operating costs.

**3 They keep systems clean.** Because of their natural detergency, the tank and system stay clean. Coolers keep operating at peak efficiency.

**4 They have long life.** Sun Quenching Oils do not thicken up in service, and under normal operating conditions, they need never be replaced.

**5 They assure a uniform rate of cooling.** These oils have excellent metal-wetting characteristics. They do not lose quenching speed after extended use.

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**SUN OIL COMPANY, Phila. 3, Pa.**

Perhaps I *am* paying too much for quenching oil. ☐ I'd like a Sun Representative to show me field reports of other companies' experience with Sun Quenching Oils. ☐ Please send me the informative booklet "Sun Quenching Oils."

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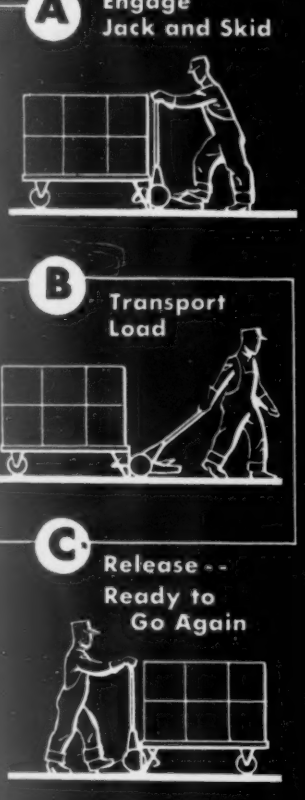
**Cut Handling Costs with the Colson LIFT-JACK System – it's as simple as ABC**




● Through production, in and out of storage, on and off freight cars ~~or trucks, one~~ Colson Lift-Jack, with wood or steel semi-live skids, does the work of many conventional hand trucks, saves time and money.

Other cost-cutting materials-handling equipment by Colson includes drum and barrel trucks, platform trucks, hand trucks and precision-built wheels and casters. Our engineers are glad to help you select the right equipment to meet your needs—exactly.

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**THE COLSON CORPORATION**
ELYRIA, OHIO


(*Continued from page* 268)

presented the awards during a general session of the Third National Standardization Conference in Chicago, in conjunction with the Centennial of Engineering.

**J. A. Callahan** and **L. W. McAndrews** have been appointed Purchasing Agents for Pittsburgh Steel Company, Pittsburgh, Pa., according to an announcement by Joseph G. Smith, Director of Purchases.

Mr. McAndrews will have charge of raw materials purchases, and Mr. Callahan purchases of other than raw materials. Mr. Callahan started with Pittsburgh Steel in 1937, Mr. McAndrews in 1936.

**Edmund Louis Drach**, Vice President and Director of Purchases for Abbott Laboratories, Chicago, Ill., was recently honored by the board of directors on his

Edmund L. Drach

50th anniversary with the company. His service record is the longest in the firm's history. Mr. Drach was placed in charge of purchasing in 1914, made a director in 1930 and a vice-president in 1947.

**Frank Sawonik**, Director of Purchasing for Hickok Electrical Instrument Company, Cleveland, O., has been elected a Vice President of the firm.

**Walter J. Auburn**, for the past 13 years editor of the "Chicago Purchaser", monthly publication of the Purchasing Agents Association of Chicago, has been appointed advertising manager of the magazine. He will serve in both editorial and advertising capacities. Mr. Auburn, formerly Director of Purchases and Advertising Manager for Gerrard Steel Strapping, Division of U. S. Steel Company, has resigned from that organization.

Robert A. Doyle, Purchasing Agent for the Glidden Company, Soya Products Division, has been appointed assistant editor to aid Mr. Auburn.

**Burnham B. Holmes** has been appointed general manager of paper, purchasing and traffic for Ball Brothers Co., Inc., Chicago, Ill. George H. McGowan, formerly Assistant General Purchasing Agent for Anchor Hocking Glass Corporation, has been named manager of the paper products division of Ball Brothers.


**ATLANTA, Ga.,** Alpine 4885
Morrison-Drabner Steel Co., Inc.
**BALTIMORE, Md.,** Peabody 7300
Hill-Chase Steel Company of Maryland
**Asheboro, N.C.:** Phone 8849
**Richmond, Va.:** Phone 7-4573
**BEAUMONT, Tex.,** Phone 4-2641
Standard Brass & Mfg. Co.
**CHICAGO METROPOLITAN AREA**
Korhumel Steel & Aluminum Company
**Evanston, Ill.:** Ambassador 2-6700
**CINCINNATI, Ohio,** Wabash 4480, 4481
Morrison-Drabner Steel Co., Inc.
**CLEVELAND, Ohio**
Nottingham Steel Company
Atlantic 1-5100
Copper & Brass Sales, Inc.
Endicott 1-6757
**DALLAS, Tex.**
Delta Metals, Inc.
Hunter 7446
Earle M. Jorgensen Co.
Riverside 1761
**DAVENPORT, Iowa,** Phone 3-1895
Nichols Wire & Aluminum Co.
**DETROIT, Mich.**
Copper & Brass Sales, Inc.
Lorain 7-3380
**HONOLULU, T. H.,** Phone 5-2541
Permanente Cement Co.
**HOUSTON, Tex.**
Standard Brass & Mfg. Co.
Preston 1123
Earle M. Jorgensen Co.
Orchard 1621
**INDIANAPOLIS, Ind.**
F. H. Langsenkamp Company
Imperial 4321
Korhumel Steel & Aluminum Company
Franklin 5361
**KANSAS CITY, Mo.,** Victor 1041
Industrial Metals, Inc.
**LOS ANGELES, Calif.**
Eureka Metal Supply Company
Mutual 7286
Earle M. Jorgensen Co.
Lucas 0281
Reliance Steel Company
Adams 6133
**MILWAUKEE, Wis.,** Evergreen 4-6000
Korhumel Steel & Aluminum Corp.
of Wisconsin
**MINNEAPOLIS, Minn.,**
Korhumel Steel & Aluminum Company
Gladstone 5943, Prior 4030
**NEW ORLEANS, La.**
Orleans Steel Products Co., Inc.
Raymond 2116
Standard Brass & Mfg. Co.
Aud. 1353
**NEW YORK METROPOLITAN AREA**
A. R. Purdy Co., Inc.
**Lyndhurst:** Rutherford 2-8100
**New York:** Chelsea 3-4455
**Newark:** Humboldt 2-5566
**OAKLAND, Calif.**
Gilmore Steel & Supply Company
Glencourt 1-1680
Earle M. Jorgensen Co.
Higate 4-2030
**OMAHA, Nebr.,** Atlantic 1830
Gate City Steel Works
**ORLANDO, Fla.,** Phone 7124
Profile Supply Company
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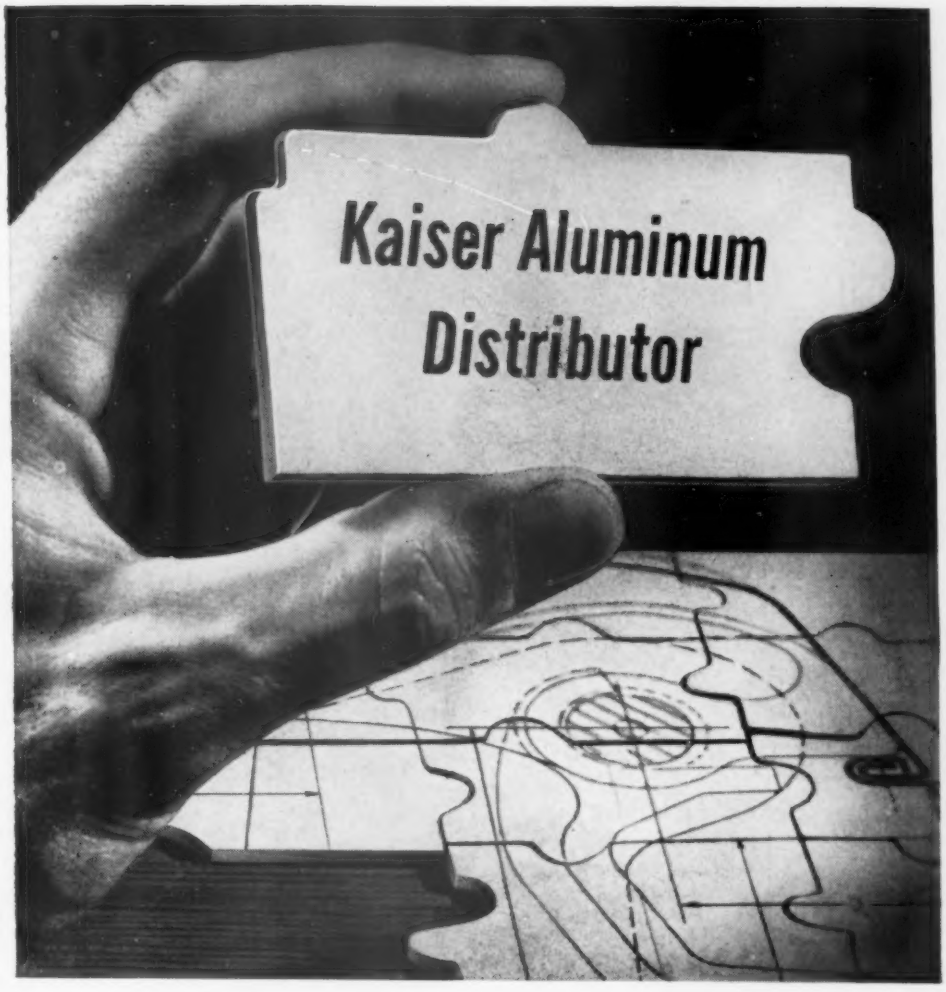
**York:** York 5790
**PHOENIX, Ariz.,** Phone 8-5331
Arizona Hardware Co., Inc.
**PITTSBURGH, Penna.,** Hemlock 1-5803
Follansbee Metal Warehouses
**PORT ARTHUR, Tex.,** Phone 5-9377
Standard Brass & Mfg. Co.
**PORTLAND, Ore.,** Tuxedo 5201
Eagle Metals Inc. of Oregon
**SAN FRANCISCO, Calif.,** Klondike 2-0511
Gilmore Steel & Supply Company
**SEATTLE, Wash.,** Lander 9974
Eagle Metals Company
**SHREVEPORT, La.,** Phone 2-9483
Standard Brass & Mfg. Co.
**SPOKANE, Wash.,** Madison 2419
Eagle Metals Company
**ST. LOUIS, Mo.,** Lucas 0051-2-3
Industrial Metals, Inc.
**WICHITA, Kans.,** Phone 7-1208, 7-1209
General Metals Incorporated
**WORCESTER, Mass.,** Worcester 7-4521
Merrill Aluminum Corporation




# He fits into your picture

UNDER any market conditions, the *wide range of services* offered by your Kaiser Aluminum Distributor makes him an important part of your picture.

He stocks a large variety of aluminum forms to give you prompt, dependable delivery.

He puts his specialized knowledge to work on your problems—studies new methods to help you get the most from available supplies. He supplies experimental quantities and helps you meet emergency requirements.

He closely watches continually changing government regulations—will assist in obtaining sub-contracts.

*Even now,* he may be able to supply all the aluminum you need. For Kaiser Aluminum is completing facilities to increase its production of primary aluminum by 137%.

Why not get better acquainted with your Kaiser Aluminum Distributor *soon?*

**Your nearest Kaiser Aluminum Distributor is listed at the left. Call him TODAY.**

# Kaiser Aluminum

**Setting the pace . . . through quality and service**

**PRODUCERS OF:** Sheet • Coil • Plate • Pig • Ingot • Billet • Foil • Electrical Conductor Residential Siding • Corrugated Farm and Industrial Roofing • Shade Screening • Rod, Wire & Bar Screw Machine Stock • Forging Stock • Rivet Wire • Roll-Formed Shapes • Extrusions

## HERE'S HOW YOUR DISTRIBUTOR HELPS YOU:

**MORE VERSATILE INVENTORY**—Warehouse stocks give you the opportunity to select from a complete range of alloys and form—slit, sheared, or sawed to fit every production demand.

**LOWER RAW MATERIAL INVESTMENT**—Daily delivery eliminates tying up your dollars in idle or obsolete inventory; improves your current capital position.

**LOWER COSTS**—Specialization of warehouse plant and handling equipment permits deliveries at lower cost at machine side, cuts stock keeping and accounting costs.

**SMALLER SPACE REQUIREMENTS**—Space necessary to house your average raw material inventory can be devoted to production. Becomes a source of income rather than an expense.

Rubber Television Anode Shield Manufactured by Continental for the Ucinite Company

# Behind your television screen . . .

## Continental Rubber gets into the act

In the unseen act behind your television screen, a small cup-shaped rubber shield plays an important role. This shield fits over the anode on the side of the tube. Its function is to "seal in" high voltage current and thus prevent surface discharges that cause picture distortion.

Ordinary rubber compounds, of course, can't fill the bill. *This* rubber part must have exceptional dielectric properties and unusual stability under sustained heat. It must resist the deteriorating effects of ozone created by electrical discharges. In addition, the rubber shield must be precision molded to insure proper seating against the side of the television tube.

Continental engineers, working closely with Ucinite Company engineers, have met these exacting requirements. This technical cooperation typifies the service in rubber offered by Continental.

When *you* need better engineered rubber parts, why not enlist the service of specialists in molded and extruded rubber?

***LET US SEND YOU THIS CATALOG***

This new engineering catalog lists hundreds of standard grommets, bushings, rings and extruded shapes. It will be a valuable addition to your working file. Send for your copy today or . . .

***See our Catalog in Sweet's File for Product Designers***

MANUFACTURERS SINCE 1903

# CONTINENTAL RUBBER WORKS

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BRANCHES

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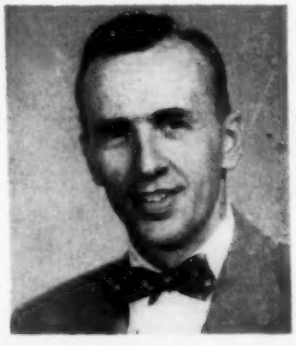
| Chicago, Ill. | Hartford, Conn. | New York, N. Y. | San Francisco, Calif. |
| Cincinnati, Ohio | Indianapolis, Ind. | Philadelphia, Pa. | Syracuse, N. Y. |


**Frank S. Conable,** Purchasing Agent of Corning Glass Works, Corning, N. Y. since 1931, has been appointed to the new position of Director of Purchases. Succeeding Mr. Conable as Purchasing Agent is Ralph P. Baker, Jr., an Assistant Purchasing Agent.

A graduate of Syracuse University, Mr. Conable joined Corning Glass Works in 1920. Throughout his 32 years with the company he has been associated with the Purchasing Department in various capacities, and has been Purchasing Agent for the past 21 years.

Mr. Baker, a graduate of Lehigh University and Massachusetts Institute of Technology, came with Corning in 1946. He served at Pressware and Charleroi plants, and as a senior sales engineer in the Electrical Products Division prior to his transfer to purchasing early in 1951.

**Henry Pentney** has been appointed Purchasing Agent for the Wildroot Company, Buffalo, N. Y. He started with



Henry Pentney

the company 14 years ago as office boy, and worked in various departments until becoming Assistant Purchasing Agent several years ago.

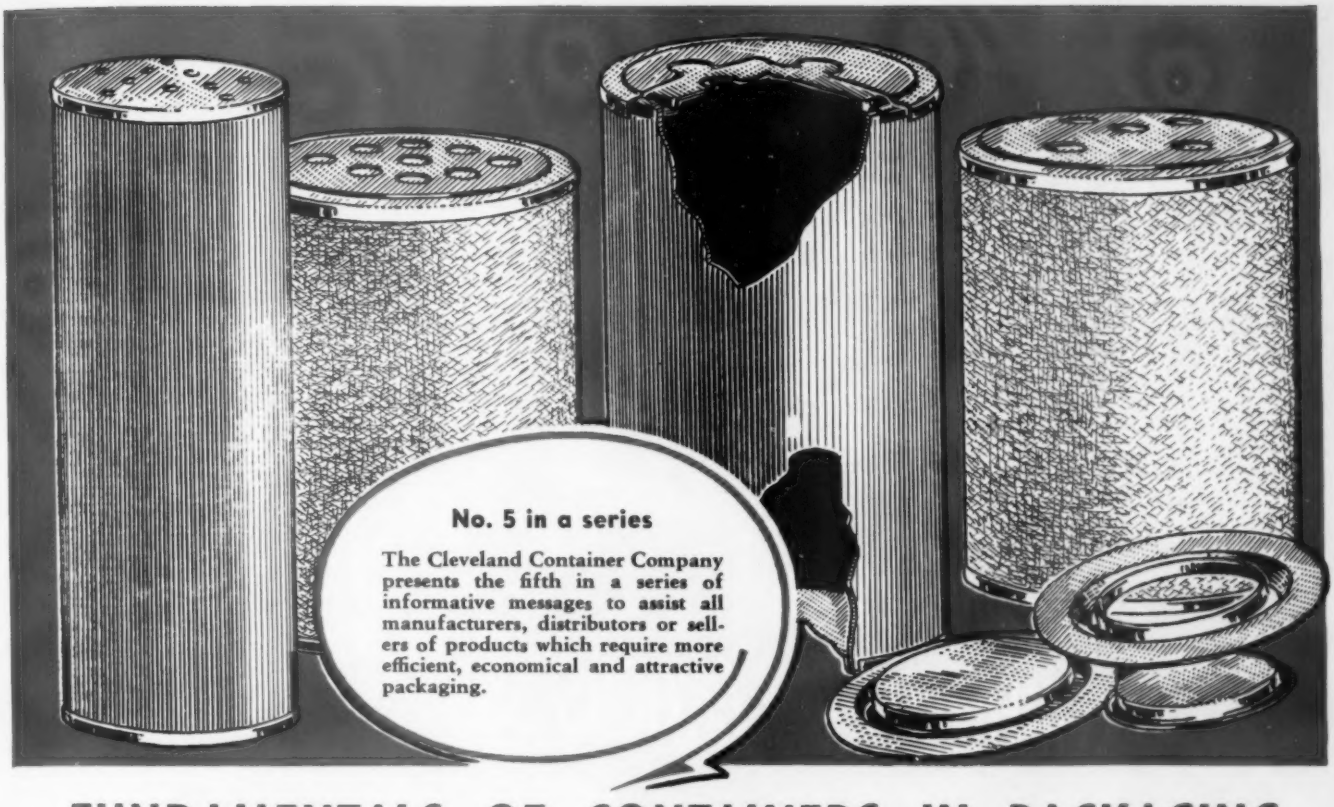
**E. W. Shoupe,** in addition to his present duties as Purchasing Agent, has been appointed Manager of the Purchasing Department of The Ohio Oil Company, Findlay, O. He succeeds J. D. Anderson, who has been named Assistant Division Manager of the Houston, Tex. production division.

M. E. Loose, Assistant to the Manager of the Purchasing Department, has been named to the newly established position of Assistant Manager of the Purchasing Department.

**R. B. Reid** has joined the Bowaters Southern Paper Corporation of Calhoun, Tenn. as Purchasing Agent. He was formerly Purchasing Agent for the Brown Company, Berlin, N. H.

**Harold M. Burrows** has been named Purchasing Agent for the Blackstone Valley Gas & Electric Company, Woonsocket, R.I. He succeeds the late Robert Johnston.

**Simon Askin,** Vice President in charge of Industrial Relations and Purchasing of Heyden Chemical Corp., New York, N.Y., has been elected President of the firm.


No. 5 in a series
The Cleveland Container Company presents the fifth in a series of informative messages to assist all manufacturers, distributors or sellers of products which require more efficient, economical and attractive packaging.

# FUNDAMENTALS OF CONTAINERS IN PACKAGING

**Type No. 5—Metal End Turn Sifter Top Cans**

Turn Sifter Top Cans are made of high grade uniform gauge chipboard, spirally wound to form th sidewall of the container. To such a sidewall, the end closures of metal are applied to achieve a deep drawn seamed closure. The resulting container is of high quality and will withstand hard and repeated usage.

**SIZES AVAILABLE** . . . These containers are available in diameters of 1⅞", 2¼" and 3" and to lengths as desired.

**END CLOSURES** . . . In general practice, and where quantities are relatively small, these cans are made with a metal undertop and a well fitted nickel plated turn sifter top, perforated to suit requirements with from one to twelve openings. Bottom closures are of the tin plate ring and plug type. Where quantity warrants, they may be made as a seal-tight container by means of a tin plate bottom closure to be applied after the container is filled. Seaming machines are available under lease for this closing operation. Where preference dictates, decorative colored ends are readily available by use of bright color lacquers or baked enamels. ★ ★ ★

**LABELING** . . . Strip form labels may be applied or, as determined by the size of the container, direct printing on the can in single color. Where a spot label is desired, decorative paper, in harmony with or in contrast to the spot label may be spiraled onto the outside of the container.

**VARIATIONS** . . . Turn Sifter Top Cans may be provided with any of a multitude of special liners to suit particular purposes. Liners in popular use include moisture and grease resistant barriers such as paraffin, glassine, aluminum foil and various plastic special lining materials.

**END USE** . . .The Metal End Turn Sifter Top Can affords many solutions to the problems of packaging fine and medium coarse granular products. Talcum and dusting powders, insecticides, moth crystals, foot powders, grated cheese and many others are typical of products successfully packaged in these containers.

**SHIPPING** . . . All Cleveland Containers are carefully packed to protect their bright metal tops. Uniform sizes of high test corrugated shipping cartons ensure ease of handling and economy in storage space. ★ ★ ★

***WHY PAY MORE? FOR THE BEST***

***. . . CALL CLEVELAND***

**The CLEVELAND CONTAINER Co.**
**6201 BARBERTON AVE. CLEVELAND 2, OHIO**
**• All-Fibre Cans • Combination Metal and Paper Cans**
**• Spirally Wound Tubes and Cores for all Purposes**
★
PLANTS AND SALES OFFICES: Cleveland, Detroit, Chicago, Plymouth, Wisc., Jamesburg, N. J., Ogdensburg, N. Y. • ABRASIVE DIVISION at Cleveland
SALES OFFICES: Grand Central Terminal Bldg., New York City; Washington Gas Light Bldg., Washington, D. C.; West Hartford, Conn.; Rochester, N. Y.
Cleveland Container Canada, Ltd., Prescott, Ontario • Offices in Toronto and Montreal

*Write for additional copies of this message.*

Revolving drum test proves extra strength added to carton by gummed tape closure

ONLY Gummed Tape ACTUALLY REINFORCES YOUR CARTONS

Unlike other closures, gummed tape is more than just a closure. The adhesive welds extra thicknesses of tough kraft to your carton—and reinforces it where most needed: at corners and seams. The tape becomes an integral part of your carton.

Only gummed tape gives such protection. Because it is a flexible closure, it helps your carton absorb shock without damage. Stresses are distributed evenly, too, instead of being concentrated on a few isolated spots.

PEPSODENT USES BLUE RIBBON TAPE

Pepsodent chooses strong, fast-acting Blue Ribbon Superstandard Gummed Tape to guard shipments of their famous products.

Blue Ribbon SUPERSTANDARD GUMMED TAPE

HUDSON PULP & PAPER CORP., Dept. 23, 505 Park Ave., New York 22, N. Y.


**Wilson Oelkers** has been appointed General Purchasing Agent of Philco Corporation, Philadelphia, Pa. In this new capacity, Mr. Oelkers, who has been Purchasing Agent of the Television and Radio Divisions, will establish the broad purchasing policies of the company and coordinate purchasing activities of all divisions.

Mr. Oelkers graduated from the University of Pennsylvania in 1934. For the past 18 years he has served in positions of increasing importance in the purchasing department. During World War II, he acted as special coordinator on important radar production projects undertaken for the Army and Navy.

Merle N. Thompson has been named to succeed Mr. Oelkers as Purchasing Agent of the Television and Radio Divisions. He joined Philco in 1933 as a member of the quality control organization and became associated with the purchasing department in 1941. For the past several years he has been coordinator of television, home and auto radio purchasing as assistant to Mr. Oelkers.

**H. L. Faust** has been appointed Purchasing Agent of the Meter and Instrument Division of the General Electric Company, Lynn, Mass. Mr. Faust was formerly Production Manager of the Switchgear Department, dividing his time between the Philadelphia Works and the West Lynn Works.

**J. I. Maguire** has been named Purchasing Agent for the Eastern Division of Alpha Portland Cement Company, Easton, Pa. He succeeds Irvin J. Rinker, who was recently appointed assistant to the Treasurer of the company.

**M. A. James** has been appointed Purchasing Agent of Preco, Incorporated, Los Angeles, Calif. Mr. James, who succeeds E. R. Davis, has been in charge of the company's tool department for the past nine and a half years.

**David L. Flanders** has been named Manager of Purchasing, textiles, advertising and paper products, for the B. F. Goodrich Company, Akron, O. Mr. Flanders joined the company as a laboratory chemist.

## CLARENCE F. FEHNEL

Clarence F. Fehnel, retired Purchasing Agent of the Pennsylvania Dixie Cement Corporation, Allentown, Pa., died recently at age 67. He was associated with the cement industry for more than 40 years before his retirement in 1946. Mr. Fehnel was president of the Purchasing Agents Association of the Lehigh Valley during the 1944-45 term.

## JOSEPH CARCIONE

Joseph Carcione, 47, Purchasing Agent of Easton Car and Construction Company, Easton, Pa., died unexpectedly in September while on a fishing trip in Canada. Mr. Carcione was a director of the Purchasing Agents Association of the Lehigh Valley at the time of his death.

# What she doesn't know about BRASS
## she could find out in a Flash!

It takes plenty of Brass to make a star. For stars must shine, and that takes light. But take Brass away, and she'd be dancing in the dark. Ask any stage electrician or Hollywood "top juicer" . . . he'll point out scores of unseen spots where *only Brass* can do the job that's being done so well. For that matter, look around your own home, from light bulbs to fuse box.

The reasons are not far to seek. *Only Brass* combines the qualities of relatively high conductivity, resilient strength, and almost endless service life. That's why in lighting, as in so many other fields of application, there is no substitute for the golden-yellow alloy . . . cast, drawn and rolled as carefully as any precious metal . . . the way it's done here in the modern mills at Bristol. Now you may have a job, too, for which Brass is best, whether it's in electrical equipment or in costume jewelry. Want more light on this profit-laden possibility? Write:

. . .

The BRISTOL BRASS CORPORATION, makers of Brass since 1850 in Bristol, Conn. Offices or warehouses in Boston, Chicago, Cleveland, Dayton, Detroit, Los Angeles, Milwaukee, New York, Philadelphia, Pittsburgh, Providence, Rochester.

"Bristol-Fashion" means **Brass at its Best**

# Among the Companies You Buy From

**New York, N. Y.** — United States Steel Corporation. F. Royal Gammon has been named assistant vice president — sales, eastern area, and Herbert J. Watt has been named assistant vice president—

**F. Royal Gammon**

sales, western area. Mr. Gammon is located here, and his area comprises the territories of these district sales offices: Boston, Buffalo, Cleveland, New York, Philadelphia and Washington. Mr. Watt is located in Chicago and his area includes the territory covered by the Chicago, Cincinnati, Detroit, Indianapolis, Milwaukee, St. Louis, and St. Paul offices.

**Union, N. J.**—Federal Products Corporation. A branch sales office has been opened here at 1018 Stuyvesant Avenue, to serve the greater New York City area. James Gunderson will manage the office. Robert A. Powell will also work in the territory, out of the new office.

**Birmingham, Ala.**—Harnischfeger Corporation. The firm's new sales office, warehouse and service station was introduced here on October 11 with an open house and barbecue. The opening also signified the consolidation in Birmingham of all territory formerly served by P&H offices in Memphis, Tenn. and Jacksonville, Fla.

**Akron, O.**—Firestone Steel Products Company. George B. Moseley has been appointed general sales manager. Mr. Moseley, who has been sales manager for contracting manufacturing, joined the company in 1949.

**Syracuse, N. Y.**—Crucible Steel Company. Clayton K. Baer has been appointed service engineer in the tool steel sales division. He will be engaged in field work relating to application of Crucible tool steel products, and liaison between customers and the research and production departments at the mill.

**Niagara Falls, N. Y.**—The Carborundum Company. Fred W. Scott, Jr., has been appointed manager of the newly established merchandising sales division.

**Lebanon, Ind.**—Honan-Crane Corporation. D. J. Jones has been appointed general sales manager.

**Pittsburgh, Pa.**—National Electric Products Corporation. Luther D. Shank has been appointed assistant to the vice-president and general sales manager. He will also be in charge of Pittsburgh district sales. Mr. Shank recently served as director of the Electrical Division, National Production Authority, Washington, D. C.

**Buffalo, N. Y.**—Buffalo Bolt Company, Division of Buffalo-Eclipse Corporation. Colman Curtiss, Jr., has been named assistant general sales manager. He succeeds Lawrence L. Hurd, who has been appointed director of public relations of the Buffalo-Eclipse Corporation.

**Chicago, Ill.**—Kimberly-Clark Corporation. Chicago Paper Company, 801 South Wells St., has been appointed distributor of Kimpak, an interior packaging material, and certain other branded wadding products.

**Oaks, Pa.**—Synthane Corporation. E. Eldridge Smith has been appointed sales manager, to succeed Herbert Widdop,

**E. Eldridge Smith**

who is now manager of the order and service department. Mr. Smith joined Synthane in 1940 as a salesman. Later he headed the Philadelphia sales office, becoming assistant sales manager of the company in 1948.

**New York, N. Y.**—Johns-Manville Corporation, Celite Division. William J. Bucklee has been appointed general sales manager.

**Chicago, Ill.**—Brown & Sharpe Mfg. Co. Thomas F. McLaren has been appointed representative in the company's office here. He succeeds Howard K. Jackson.

**Atlanta, Ga.**—Atlantic Steel Company. R. E. O'Neill has been appointed assistant general manager of sales.

**Worcester, Mass.** — Worcester Pressed Steel Company. Lyndon B. Burnham has been appointed general sales manager. He was formerly vice-president of the Roland Teiner Company. He replaces Owen H. Wenning. Worcester Pressed Steel is planning to double its output in the near future.

**Richmond, Va.**—Chase Bag Company. A new sales office has been opened here at 6009 West Broad Street under the direction of J. A. White. Mr. White will supervise sales for the company in the Virginia-Carolina area.

**New York, N. Y.**—Shell Chemical Corporation. G. W. Huldrum, Jr., has been appointed sales manager, eastern division. V. C. Irvine has been named western division sales manager, with headquarters in San Francisco

**New York, N. Y.**—Joseph T. Ryerson & Son, Inc. William O. Springer has been appointed manager of the company's plant here.

**Cincinnati, O.**—Chase Brass & Copper Co., Inc. Arthur F. Norling has been assigned to the Cincinnati district as outside sales representative.

**New York, N. Y.**—The Bridgeport Chain & Mfg. Co. George E. Campbell has joined the company as district salesman here. He previously was with Yale & Towne Mfg. Co. for several years in a sales capacity.

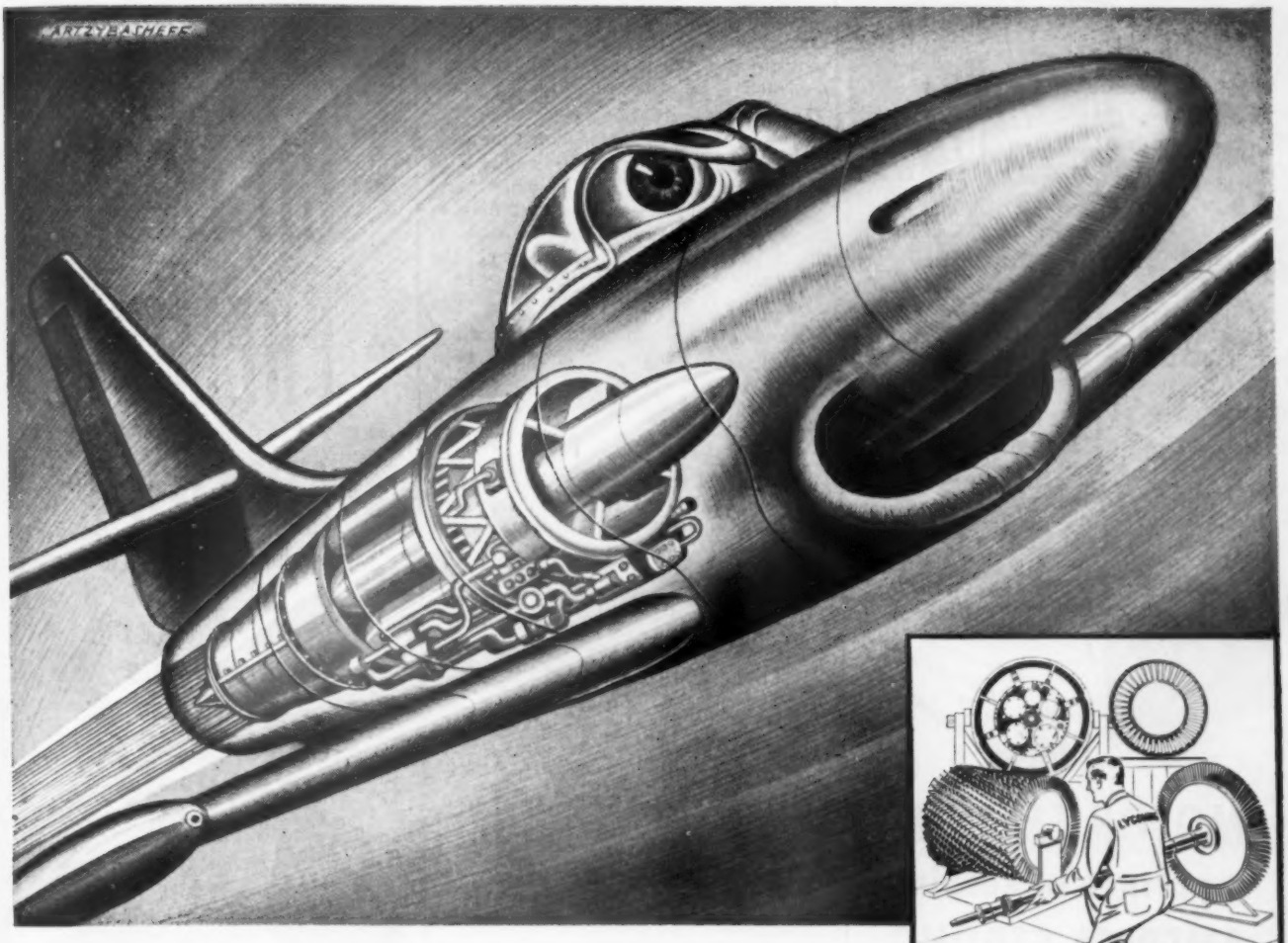
**Cleveland, O.**—The Reliance Electric & Engineering Company. John M. Duff has been assigned to the applied engineering and industrial sales department. He has worked in many phases of both a-c and d-c design for the company.

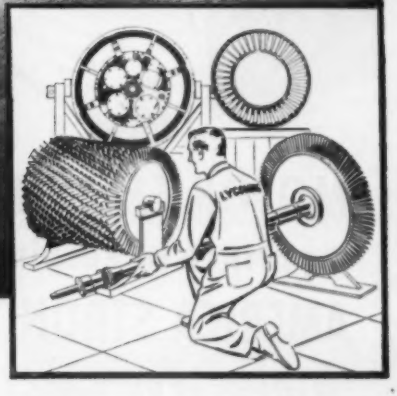
**Cambridge, Mass.**—Boston Woven Hose and Rubber Company. The following appointments have been made: H. S. Johnson, director of merchandising; L. M. Atwood, assistant general sales manager; J. H. Alsen, director of engineering applications.

**Youngstown, O.**—Republic Rubber Division, Lee Rubber & Tire Corporation.

**Myron C. Meyer**

Myron C. Meyer has been promoted to wire braid hose sales manager. He will direct sales activities of the division's new line of wire braid hose now being produced in a new $2,500,000 plant addition.





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To gun a jet to incredible speeds . . . to power it through the intricate twists and turns of combat . . . to "pour it on" in climbs, in dives, in instantaneous bursts of speed—the mighty engine of a jet plane demands parts that are tough, precise and unfailing. To assure such vital performance, General Electric looks to Lycoming as a leading supplier of the major components that go into its superb J-47 jet engine.

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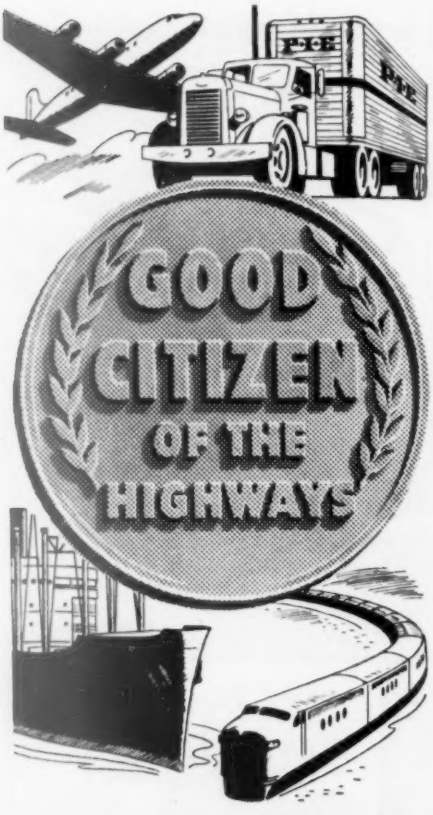


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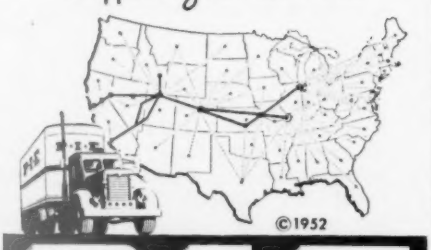

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**Chicago, Ill.**—Sipi Metals Corp. Maury E. Lippert has been appointed general sales manager. He has been with the company for the past 14 years and has been active in metal sales for 33 years.

**Chicago, Ill.**—Diamond Alkali Company. Earl J. Mills has been named manager of the company's branch sales office here. The office supervises sales activities in Illinois, Indiana, Iowa, Michigan, Minnesota, Wisconsin, Nebraska and the Dakotas.

**Chicago, Ill.**—Inland Steel Container Company. John H. Strome has been appointed sales manager. Mr. Strome joined the company in 1950 as assistant to the president.

**New York, N. Y.**—Continental Can Company, Inc., Eastern (Metal) Division. Two new general manager posts have

Lenvik Ylvisaker

been created. Lenvik Ylvisaker will be general manager of the northeastern district. He was formerly manager of the company's Pittsburgh plant. Wilbur K. Neuman will be general manager of the southeastern district. He was formerly director of product sales.

**Kingsport, Tenn.**—Tennessee Eastman Company. Guy A. Kirton has been named assistant sales manager of the company's chemical sales division.

**Detroit, Mich.**—The Claud S. Gordon Company. Eric O. Prange has been named district manager of the branch office here at 2832 E. Grand Boulevard.

**Wilmington, Del.**—Continental Can Company. L. L. Lauve, Jr., has been appointed assistant manager, cork sales department, at the sales office here.

**Pittsburgh, Pa.**—Scaife Company. Sheller L. Steinwender has been appointed to the new position of vice president—sales.

**Woonsocket, R. I.**—The Taft-Peirce Manufacturing Company. Russell Shepherd has been appointed sales representative in the New England territory for standard products and contract manufacturing activities.

**Wilmington, Del.**—Alloy Steel Products Company, Inc. Herbert V. Evans, Jr. has been appointed district manager here.


• **GIFTS**
• **PREMIUMS**
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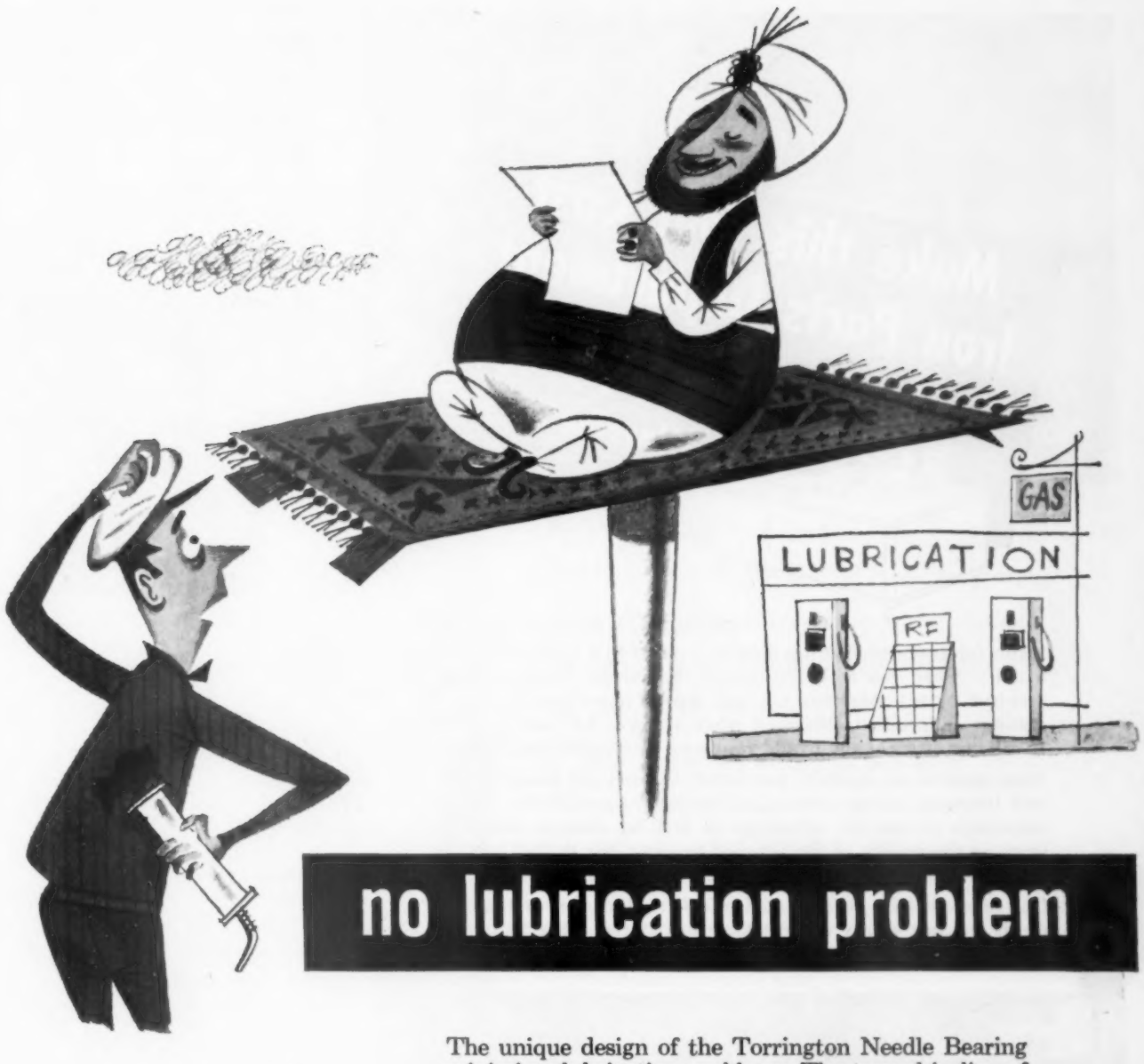
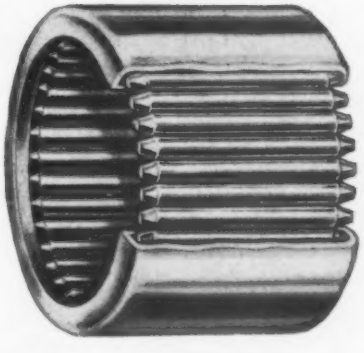



# no lubrication problem



The unique design of the Torrington Needle Bearing minimizes lubrication problems. The turned-in lips of the outer shell retain a large reservoir of oil and grease. And the full complement of small diameter rollers carries a thin lubricating film to all bearing contact surfaces. In some applications, the original lubricant will last for the life of the product.

Have you considered this and other Needle Bearing advantages—such as high radial load capacity, light weight and compact size—in terms of *your* product? Torrington engineers will welcome the opportunity to give you full details.

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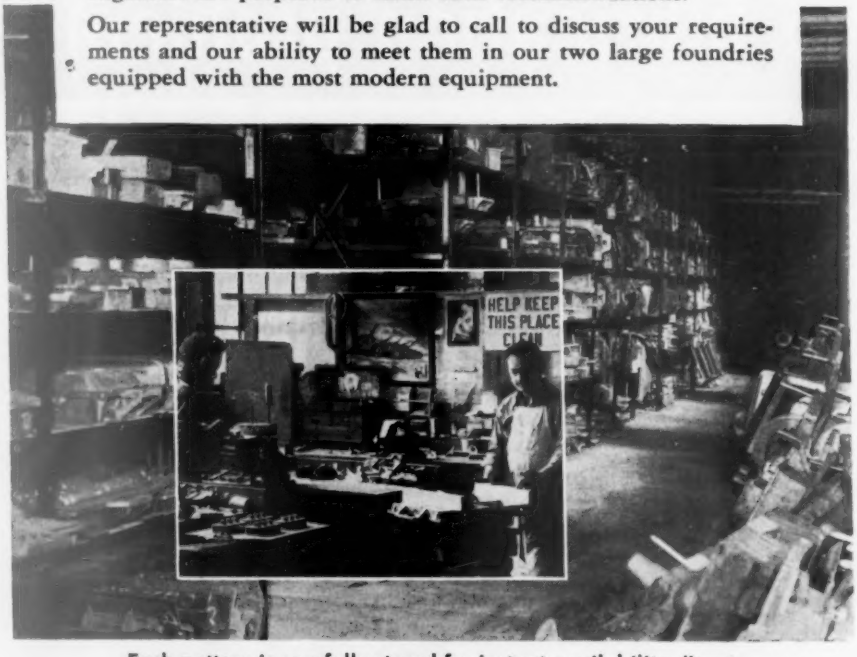
No matter what your requirements for gray iron castings may be — from half a pound to half a ton — when you make Forest City Foundries Company your cast-iron parts department you can depend upon receiving your castings as specified, delivered when wanted. All you need do is, call our office as you would your own production department.

Here patterns are carefully numbered, indexed and stored in our new fireproof storage department for instant availability. When inspection reveals the advantage of making changes that will improve the quality of the finished product, our skilled pattern engineers are prepared to make such recommendations.

Our representative will be glad to call to discuss your requirements and our ability to meet them in our two large foundries equipped with the most modern equipment.




Each pattern is carefully stored for instant availability. (Inset photo) — A corner of one of Forest City's pattern shops.

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**San Francisco, Calif.**—Moody Machine Products Co., Inc. All orders for Moody products for the states of California, Washington, Oregon, Arizona, and the territory of Hawaii are now being filled directly from the warehouse facilities of the company's West Coast representative, Walter Industries, Inc., 725 Second St., San Francisco.

**Philadelphia, Pa.**—Morse Twist Drill & Machine Co. J. T. Maidens has been made manager of the Philadelphia territory, and will be assisted by William Rogers. Mr. Maidens has been transferred from the Indiana territory, where he will be replaced by James D. Oakley.

J. T. Maidens

**Cleveland, O.**—Kobe, Inc., Division of Dresser Equipment Co. Carl P. Brown has been named manager of industrial and export sales.

**Allentown, Pa.**—Bonney Forge & Tool Works. Fred S. Dunham, Jr., vice-president and secretary, who for the past several years has supervised the company's efforts, has taken on additional responsibilities as director of sales. Harry J. Seaman has been appointed field supervisor, and E. S. Sensenderfer is now manager of merchandising.

Fred S. Dunham, Jr.

**Jackson, Mich.**—Aeroquip Corporation. George J. Fischer has been appointed general sales manager. Previously, he was with B. F. Goodrich Co. for 18 years, his most recent position being that of manager, V-Belt and packing sales.

**New York, N. Y.**—Witco Chemical Company. Lester D. Koch has been appointed eastern sales manager.

# Let the chips fall where they may...

### *Chase® Free-Cutting Brass is readily cleared*

For heavy feeds and high cutting speeds you can't beat Chase Free-Cutting Brass rod and bar. Chips from these Chase copper alloy products are short and brittle and are readily cleared from the cutting tools even during rapid and intricate cutting operations. That means longer production runs and longer life for your tools.

Write today for a copy of our book "Free-Cutting Brass—Bronze—Copper".

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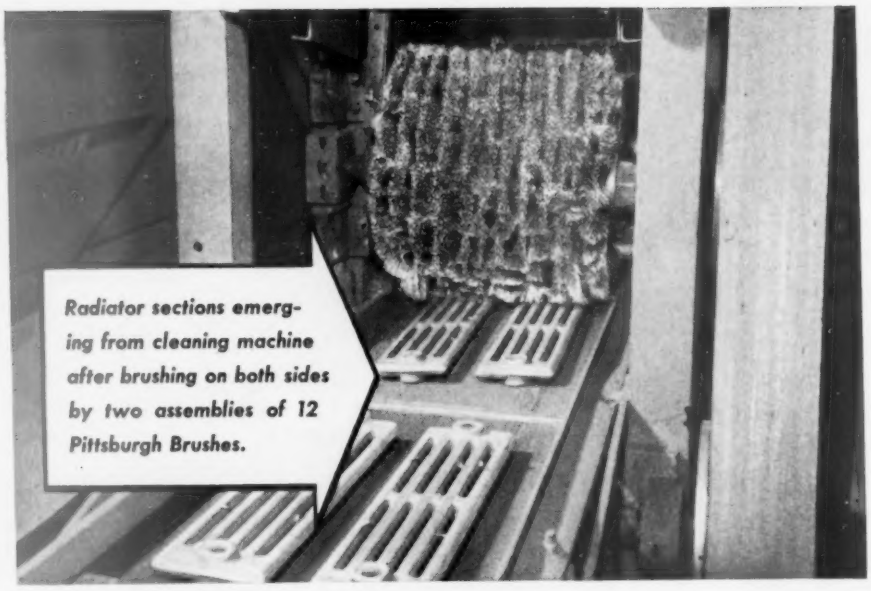
Radiator sections emerging from cleaning machine after brushing on both sides by two assemblies of 12 Pittsburgh Brushes.

# Pittsburgh Brushes help you solve problems like these—

***Cleaning Narrow Spaces***—National Radiator Company, Johnstown, Pa., cleans 30,000 radiator sections a week! To insure a perfect final finish, even the narrowest spaces must be absolutely clean prior to assembly. Pittsburgh engineers were presented with the problem of designing a brush that would reach these spaces and would fit National's existing machine. Successful? National reports: Pittsburgh Brushes "do a better job of cleaning and are more economical."

***Preparing Chills***—At Continental Foundry & Machine Co., East Chicago, Indiana, chills used to cast iron rolls must be cleaned of the oxydized metal remaining from previous usage, as well as dirt and grease accumulated in storage. After experimenting with other brushes, Continental settled on Pittsburgh Brushes because they "do the job better and stand up longer than any others previously used."

***Improving Original Equipment***—The Sommer and Maca Glass Machinery Co., Chicago, Illinois, uses Pittsburgh Brushes in the automatic washing machines they manufacture. Brushes formerly used simply didn't have the over-all density pattern needed. Pittsburgh engineers studied the problem and designed a brush which Sommer and Maca approved "because of (its) denser bristle pattern and lower cost."

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BRUSHES • PAINTS • GLASS • CHEMICALS • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

**Columbus, O.** — Jeffrey Manufacturing Company. C. W. Hawley has been named manager of original equipment sales, merchandise division. Lester L. Grooms replaces Mr. Hawley as sales manager of the products engineering division.

**Indianapolis, Ind.**—The Parker Appliance Company. J. J. Matich has been appointed industrial sales engineer, and will cover Indiana, and Louisville, Kentucky.

**New York, N. Y.**—Gustin-Bacon Manufacturing Company. Edward A. McCabe has been made manager of the New York division, covering New England, New York, New Jersey, Pennsylvania and Delaware.

## INDUSTRIAL DEVELOPMENTS

**The Babcock & Wilcox Company** has purchased facilities of a former shipyard from the Brunswick Port Authority at Brunswick, Ga., and will convert it into a plant to build boilers and related equipment. Production will start about the first of next year.

**Bivans Manufacturing,** Los Angeles, Calif., designer and manufacturer of carton handling machinery, has incorporated and changed its name to Bivans Corp.

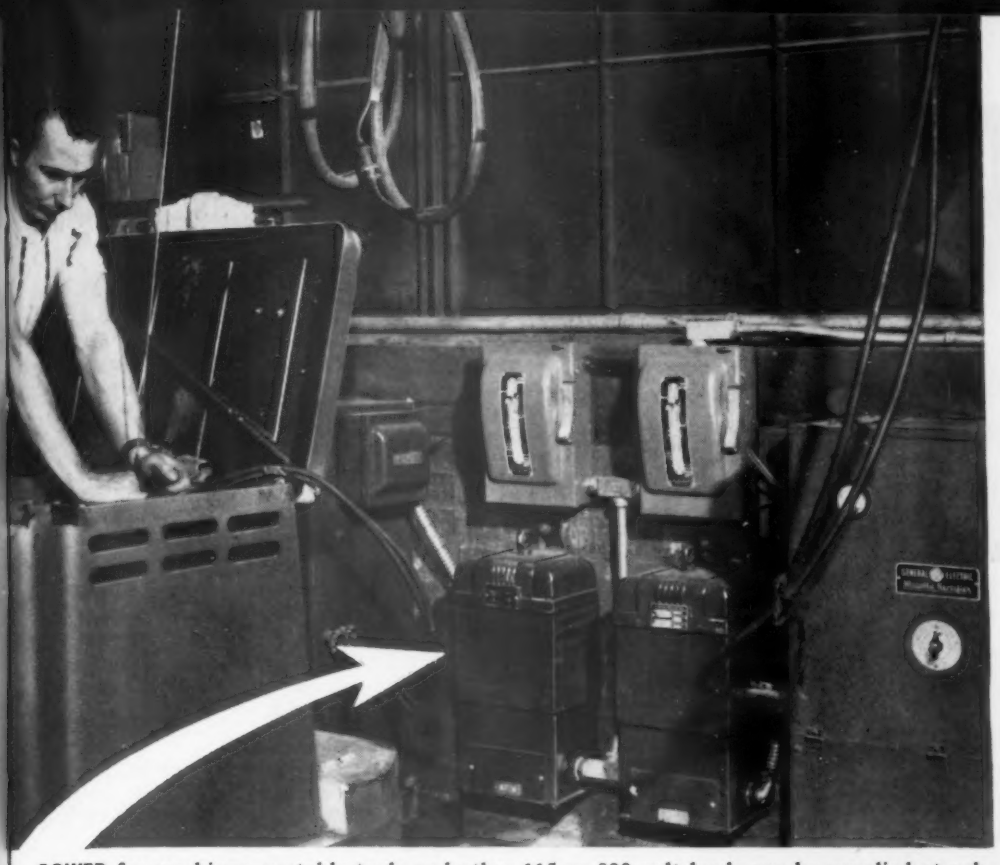
**Vulcan Steel Container Company** has been organized in Birmingham, Ala., for the manufacture of steel pails in sizes from 1 to 12 gallons. A new plant has been established in Birmingham.

**The H. M. Harper Company,** manufacturer of non-ferrous bolts and nuts, has begun construction on another addition to its plant in Morton Grove, Ill. It is a 57,000 sq. ft. area that will house Harper's newly developed Aero Division, specializing in the manufacture of high temperature fastenings used in the jet engine industry.

**Bridgeport Brass Company** of Pennsylvania has opened a new warehouse in Philadelphia at 918 East Lycoming Street. Sales and operations will be in charge of David F. Snow, district sales manager.

**Swedlow Plastics Company,** manufacturer of low and intermediate pressure laminates, and custom fabricator of sheet plastics, has opened a third manufacturing facility at Los Angeles, Calif.

**Lindberg Engineering Company,** Chicago, Ill., has purchased 4½ acres of land in Los Angeles, Calif., where it plans to build a plant for the manufacture of all types of heat treating and melting furnaces.



**POWER** for machines, portable tools and other 115 or 230 volt loads can be supplied at substantial savings when voltage is stepped down right at the load. Here Behr-Manning Corp., abrasives manufacturer, serves its G-E Metallic Rectifiers with G-E Type M Transformers.

**LIGHTING** demands correct voltage for top efficiency. Behr-Manning assures it with G-E Type D Transformers.

# Stretch the power dollars in your plant with these G-E Dry-Type Transformers

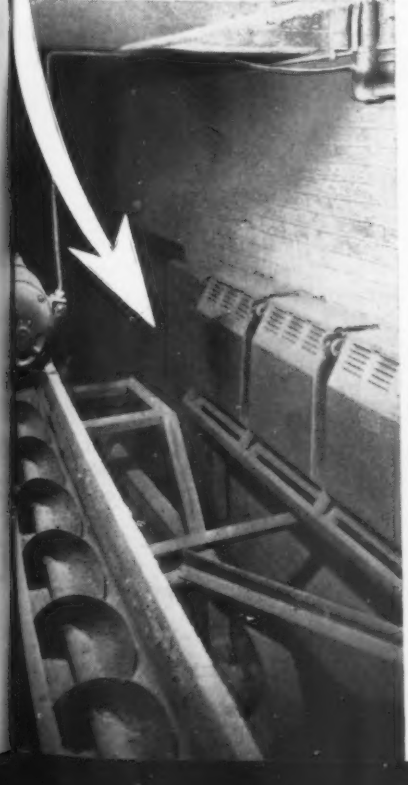
Throughout industry, wherever machines, lighting or portable tools require voltage changes, you'll find G-E Dry-Type Transformers making power dollars go further.

By stepping the voltage down to utilization level ***right at the load,*** they cut line losses and eliminate long, expensive secondary feeders. This means reduced wiring costs, higher installation efficiency—and often lower power costs.

Quiet in operation, lightweight G-E Dry-Type Transformers require practically no inspection or maintenance. Easy to install, they can be mounted on wall brackets or columns to save floor space. Many larger sizes have solderless connectors to simplify installation.

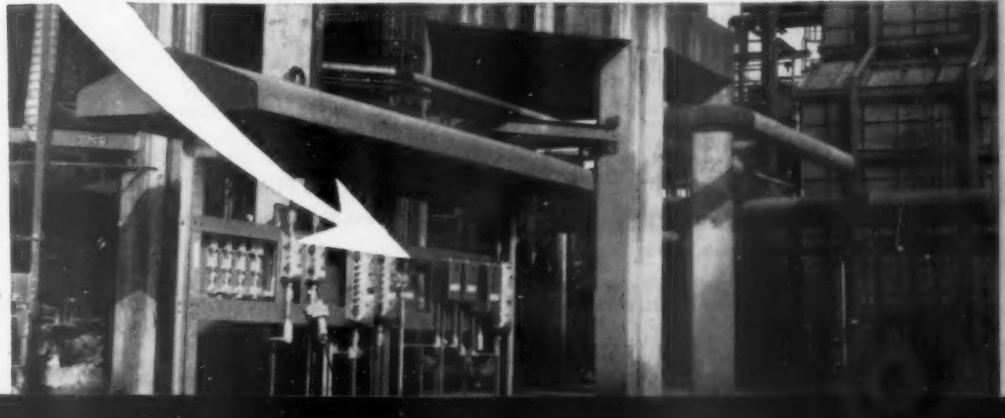
For additional information on G-E Dry-Type Transformers, call your authorized G-E distributor, today. Or write for bulletin GEC-868A, *Section 411-105, General Electric Company, Schenectady 5, N. Y.*

**INDOOR** loads use Type D's—25 kva and above. These at Producers' Cotton Oil Co. serve lighting circuits.

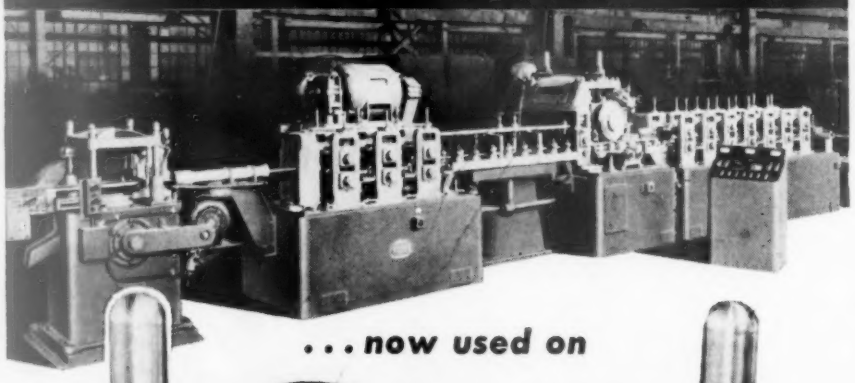


## GENERAL ELECTRIC

**OUTDOOR** loads such as this explosion-proof control center at catalytic cracking tower of Phillips Petroleum Company in Borger, Texas, can be served by G-E Type M Transformers. These versatile units are available in .25 thru 15 kva ratings for outdoor or indoor service.

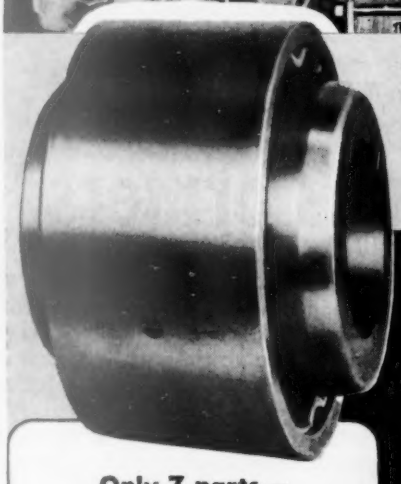


# Sier-Bath GEAR COUPLINGS



. . . now used on

YODER TUBE MILLS

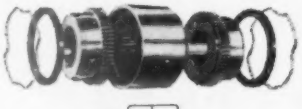


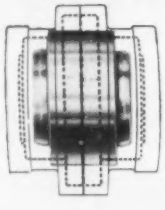
• Three size 1½ Sier-Bath Couplings (two comprising a Floating Shaft Coupling) on the Welder of a M 2½ Type Yoder Tube Mill.

## Revolutionary Sier-Bath Flexible GEAR COUPLINGS

**Only 7 parts—**

**Assembled, Uncoupled *in seconds!***





**3/5 Usual Size, 1/2 Usual Weight**

**—Lower Moment of Inertia!**

**Sier-Bath Gear Coupling compared with two major conventional types of same shaft size, HP rating.**

***Cut assembly costs, down-time***
***Allow more compact designs***
***Reduce wear on equipment***

If you make or use direct-connected equipment, be sure to get the whole story on this new coupling. Its fast connect-disconnect method alone may be able to save you thousands of dollars a year in reduced assembly time or downtime. See your local Sier-Bath Distributor, or

**WRITE FOR BULLETIN: Shows installations, advantages, specs for standard, vertical, mill motor, spacer and floating shaft types—sizes 7/8 to 6, HP 4 to 600 per 100 RPM. (Special types and sizes on request.)**

Established 1905 Member A.G.M.A.

**Sier-Bath GEAR and PUMP CO., Inc.**

**9241 Hudson Boulevard, North Bergen, New Jersey**

***Also Manufacturers of Precision Gears and Screw and "Gearex" Rotary Pumps***


**The Whistlclean Corporation** has been formed by L. Sonneborn Sons, Inc., New York, to market Whistlclean industrial cleaners, detergents, disinfectants and insecticides. The products were formerly sold by American Oil & Disinfectant Corp., another Sonneborn subsidiary.

**Carl Hirschmann Company,** Manhasset, N.Y., importer of Swiss precision machine tools, has absorbed the Hauser Machine Tool Corporation, also importers of machine tools.

**The Carpenter Steel Company's Alloy Division,** Union, N.J., has begun a mill expansion making possible an increase in production capacity of approximately 40%. The mill addition will produce stainless steel pipe and tubing. The expansion will be achieved without a commensurate increase in the use of nickel and other strategic alloys, because of the plant's emphasis on extra light wall pipe known as Schedule 5.

**Anaconda Copper Mining Company** has announced the completion of the organization of its subsidiary, Anaconda Aluminum Company (formerly Harvey Machine Co., Inc., of Montana). An aluminum reduction plant will be built near Columbia Falls, at the base of Teakettle Mountain, in Flathead County, Montana. Two potlines together with accessory buildings and equipment, capable of producing 50,000 tons of aluminum annually, will be installed. The plant is scheduled for completion early in 1954.

**Tube Turns, Inc.,** Louisville, Ky., manufacturer of welding fittings and flanges, has acquired the Kerotest Manufacturing Company, Pittsburgh, Pa. Kerotest makes steel and brass valves. The corporate identity of the Kerotest Manufacturing Company, now a wholly-owned subsidiary of Tube Turns, will be retained.

**General Electric Company's Chemical Division,** Pittsfield, Mass., has announced a new marketing approach on G-E silicone rubber, designed to acquaint rubber fabricators with the techniques and formulations necessary to produce molding and extruding compounds on their own equipment from raw silicone gums. Heretofore, silicone rubber compounds were only available from the manufacturers of silicones. Fabricators can now handle silicone rubber in the same manner as other synthetic and natural elastomers. General Electric is making available a new G-E silicone rubber gum and detailed suggestions for converting the polymer to finished compounds.

**Rutley Industries, Inc.,** 415 Greenwich St., New York, N.Y., is a new firm offering consultation service and private production of special cleaning compounds for the chemical and metal industries. The company is also manufacturing a standard line of preparations for sounder welding and brazing.

# It pays to "Meet the Family" of the First Self-tapping Screw

The *original* Self-tapping Screw was the Parker-Kalon Type A. Today P-K makes several standard types, and hundreds of modifications can be made to special order. Here's why it will pay you to "meet the family".

From this wide selection you can choose the screws best suited to your fastening job, often several types in the same assembly. There is no need to fit the job to any single type of screw.

That's why the advice of a P-K Assembly Engineer is unbiased. You can get the help of this fastening specialist on request. With the experience of more than a million applications to draw on, he can quickly determine the best way to replace slow, complicated assembly techniques with the fast, easy, efficient P-K method.

Question *every* fastening. A P-K Assembly Engineer will help you start making the savings you've been missing.

**PARKER-KALON®**

*The Original* **SELF-TAPPING SCREWS**

AND OTHER FASTENING DEVICES

## GET THIS BOOKLET

Tells "where to use what" type of screw in all types of metals and plastics, gives hole-size recommendations and other information. Ask your P-K Distributor for Form 480. Or, write Parker-Kalon Corporation, 200 Varick Street, New York 14.

*Display manufactured by General Plastics Corporation, Marion, Ind.*

**FASTENER COSTS CUT 60%** *when Bostitch wire stitcher replaced nuts and bolts on Santa assembly line.*


# HOW A STITCH IN HIS SIDE CUT SANTA'S COSTS

Before he met the Bostitch economy man, Santa had a tough time of it. His two, big, plastic halves were put together with nuts and bolts. It was a long tedious job requiring special handling, multiple jigs, extra help. Even then, Santa's halves sometimes flew apart in a high wind.

The local Bostitch man saw a way to keep Santa in one piece and still cut costs for the manufacturer. He recommended a special Bostitch metal stitcher—a machine that easily drives wire through Santa's five layers of plastic and aluminum.

Now, Santa's put together in 2/3 the former time. The cost of his fasteners has been reduced 60%. He looks neater. And he's able to survive the most side-splitting storms. *Bostitch fastens him better and faster with wire.*

That's typical of the results you can expect when you let a Bostitch economy man study your fastening methods. He'll tell you how you can make important savings by switching to Bostitch—on your production line, in your shipping room, around your office. Talk it over the next time he calls.

**QUICK CARTON CLOSING.** *A switch from tape to the Bostitch Autoclench Stapler speeds carton closing 50%. It clinches staples inside the box, entirely from the outside. Bostitch-sealed containers—tops, bottoms, and seams—travel better yet cost less.*

**BOSTITCH®**

**fastens it better, AND FASTER with wire**

**FREE BOOKLET** *describes how Bostitch stapling equipment has cut costs on so many different fastening jobs, how it can cut costs for you. Write today.*

**THERE'S A BOSTITCH MAN NEAR YOU**—*300 fieldmen in 123 cities in the United States and Canada. You can depend on Bostitch service—it's always nearby.*

**BOSTITCH,** 731 Mechanic St., Westerly, R. I.

Please send me your free "Time and Money Saving" book together with information based on the items checked below:

*For fastening, we use:* Nails ☐ Glue ☐ Tape ☐ Tacks ☐ Pins ☐ Thread ☐ Rivets ☐ Spot Welds ☐

*We fasten these materials:* Wood ☐ Paper ☐ Rubber ☐ Fabrics ☐ Plastics ☐ Leather ☐ Light Metals ☐

*Name* _____

*Company* _____

*Address* _____

*City* _____ *Zone* ____ *State* _____

ALL TYPES OF MACHINES FOR APPLYING STAPLES
ALL TYPES OF STAPLES APPLIED BY MACHINES


**H. K. Porter Company, Inc.,** Pittsburgh, Pa., has acquired The Watson-Stillman Company, Roselle, N. J., manufacturer of forged steel fittings and hydraulic equipment. It will be operated as The Watson-Stillman Fittings Division.

**The Claud S. Gordon Company** has opened a new manufacturing plant on a 6½-acre site at Richmond, Ill.

**Eclipse Fuel Engineering Co., of Canada, Ltd.** is a new company formed to handle sales and service on Eclipse products in Canada. The parent company is Eclipse Fuel Engineering Co., Rockford, Ill. Headquarters of the new company are at 705 Bloor St., West, Toronto, Can.

**Continental Can Company** has purchased a 40-acre plant site in Omaha, Neb., and will start construction this month on a plant for the manufacture of metal containers. The plant should be in production in 1953.

**Industrial Wire Products Corporation,** Los Angeles 32, Calif., has opened a new flat wire rolling mill, said to be the only one of its kind on the west coast. The mill can produce flat wire in a variety of almost 500 different sizes.

**Pittsburgh Plate Glass Company** has expanded its manufacturing facilities at Baltimore, Md., for the production of the tapered synthetic brush filament, Neoceta, to double present capacity. The filament possesses the same rate of wear as hog bristle and is used either mixed with hog bristle or alone in the manufacture of brushes.

**Brown Chemicals,** 15 Moore St., New York, N.Y., is a new company now engaged in the manufacturing, chemical processing, importing and distributing of vegetable oils and vegetable oils specialties.

**General Electric Company,** in keeping with its program of decentralization, has announced that all G-E fluorescent lamp ballasts will now be manufactured at the company's Danville, Ill. plant. Other lighting components, such as luminous-tube transformers and vapor-lamp ballasts, will continue to be made at Fort Wayne, Ind.

**Benj. Harris & Company's** new $1,000,000 plant, producing brass and bronze ingot, is now in full operation in Chicago Heights, Ill. The 10-acre plant, which took two years to build, was completed as the company celebrated its fiftieth anniversary.

**Yardley Plastics of Canada, Ltd.,** Chatham, Ont., is planning a new plant expansion, including the addition of 7,500 sq. ft. of floor space and new plastic extrusion and injection molding machines. The company is affiliated with the Yardley Plastics Company of Columbus, O.

RIGHT IN YOUR OWN BACK YARD ... BY WEST
THE DISPENSARY GETS ONLY GOLDBRICKS SINCE THE WEST CONTROL PROGRAM KO'D DERMATITIS
I THREW OUT THE S.R.O. SIGN WHEN WE STARTED WITH THE WEST DERMATITIS PLAN.. AND OUR MEDICATION AND TREATMENT COSTS TOOK A NOSEDIVE!
HEY, DOC! THE SHOWERSAN HAS TURNED THE BOYS INTO ATHLETES ... WITHOUT ATHLETE'S FEET!
WOW! THAT WEST ANTISEPTIC PROTECTIVE CREAM REALLY DOES THINGS FOR ME!
SEE YOU'VE GOT THAT EXECUTIVE TILT, DOC, SINCE WE'VE CLEANED UP OUR DERMATITIS!
MM...MM! I COULD HOLD YOUR SOFT HANDS FOREVER!
THIS DURMA-GARD OUTFIT IS BETTER THAN MUDGUARDS... NO SPLASH, NO SPLATTER, NO SPILL!
RIGHT, BOSS! SINCE WE PUT IN THE WEST 4-STEP PROGRAM, NOBODY COMES IN HERE EXCEPT TO DATE THE NURSE!
MY HANDS USED TO FEEL LIKE THE SAHARA DESERT 'TIL I STARTED USING WEST SULPHO HAND CLEANER
MEDICAL DEPT HOURS

# DERMATITIS CAN BE CONTROLLED!

How? With West's simple, inexpensive prevention and control program that ... (1) makes sure of personal cleanliness (2) protects exposed skin areas (3) prevents clothing contamination (4) guards against special hazards.

Dermatitis costs industry a staggering $100,000,000 each year. Compensation and medical care for the average case is $200. Plus, further hidden costs—absenteeism, replacement training, sacrificed quality, lowered morale, lost production. All, needless expense.

The WEST Dermatitis Control Program is based on an in-*your*-plant survey—made without obligation or inconvenience to you. Simply fill out and mail the attached coupon today.

WEST DISINFECTING Company

42-16 West Street, Long Island City 1, N. Y.

FREE

**YES! We're interested in DERMATITIS Control.** Dept. 2C

☐ Please have a WEST representative call

☐ Please send FREE Dermatitis Control Booklet

Name_____ Title_____

Company_____

Address_____

City_____ Zone____ State_____

# BOOTS
# BELLOWS
# TUBES

With years of experience in producing great quantities of boots, bellows and tubes, Acushnet has developed rubber stocks with unusual properties that provide sustained flexibility at extremely high or low temperatures, and high resistance to fluids, greases and gases.

Our precision-molded boots, bellows and tubes give enduring protection to moving parts by excluding dust, dirt, water, oil, etc. — or by retaining grease, oil, fuel — or by performing both functions at the same time over long periods of continuous flexing. These products are made on order to customer specifications — none are stocked.

Acushnet
PROCESS COMPANY

*Send for your copy of the "Acushnet Rubber Handbook", a comprehensive rubber data source widely used in industry as a reference for molded rubber parts.*

*Address all communications to 770 Belleville Ave., New Bedford, Mass.*


**Ronson Art Metal Works, Inc.,** Newark, N.J., has equipped a new and additional plant to fulfill an increasing number of sub-contracts for aircraft accessories. A special products division has been set up in the company.

**Wagner Electric Corporation,** St. Louis, Mo., has purchased from Fulton Iron Works Company a portion of its property adjoining the Wagner main plant. The new acquisition, consisting of four buildings with a combined floor area of more than 100,000 square feet, will be used to increase Wagner's transformer manufacturing capacity.

**Chippewa Paper Products, Inc.,** Chicago, Ill., has completed and put into full operation a new plant at South Hackensack, N.J.

**A. C. Norgren Co.** has acquired the manufacturing and selling rights of the Heco "Flex-Tip" air blow gun, through arrangements with the Heckethorne Mfg. and Supply Co., Littleton, Calif.

**International Minerals & Chemical Corporation** will spend more than $1,000,000 for improvements at the Potash Division's Niagara Falls, N.Y., plant. The move is expected to result in a 25% increase in production.

**Reynolds Metals Company** has increased the capacity of its Longview, Wash. plant from 60,000,000 pounds of pig aluminum per year to 100,000,000 pounds. The increase was accomplished with scarcely a change in the external appearance of the installation and without halting aluminum production. It was accomplished by enlarging the plant's 372 reduction pots.

**R. M. Hollingshead Corporation's** Industrial-Aviation Division, Camden, N. J., has been re-classified and is now known as the Industrial Division. It will sell a line of specialty oils, specification corrosion preventives, aviation maintenance products, sanitary maintenance products, H-2 non-flammable hydraulic fluid and plastic coatings.

**Morehouse Industries,** Los Angeles, Calif., manufacturer of high speed stone mills for chemical and food processing has begun a plant expansion, adding approximately 10,000 square feet.

**Hagan Corporation,** Pittsburgh, Pa., combustion and chemical engineering firm, has purchased American Cast Products, Inc., Orrville, O. The new wholly-owned subsidiary will continue to serve its customers for grey iron castings under the same manufacturing and sales policies as before.

**The Rinshed-Mason Company,** Detroit, Mich., manufacturer of automotive and industrial finishes, has purchased the Standard Paint and Varnish Company, Ltd., Windsor, Ontario.

# Cut Your Costs by Redesigning for RETAINING RINGS

Gehl Harvesters and Hammer Mills are famous for their efficiency, rugged construction and continuous heavy duty service. By skillful designing for retaining rings Gehl Bros. Mfg. Co. of West Bend, Wisconsin saves metal, money and time. Perhaps you can too.

Hundreds of machines and products can and should be redesigned to take advantage of these inexpensive, yet highly efficient, artificial shoulders. Retaining rings are certain to save man hours as well as material.

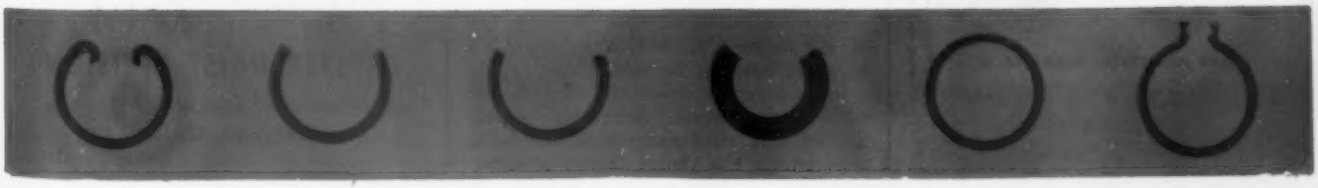
To offset the rising costs of so many things here is one sure way to increase your margin of profit.

Don't cut down large shafts to make your shoulders—it's needless waste. Groove all shafts and housings and use these high grade steel rings.

Examine your machines and products today, and send for a descriptive folder of our many types of retaining rings.

## THE NATIONAL LOCK WASHER CO.

**NEWARK 5, N. J.** **MILWAUKEE 2, WISCONSIN**



If you have a

FACTORY PROBLEM

in production, assembly, packaging, shipping

You can save time and money with the proper use of

SEAMLESS F.O.S. INDUSTRIAL TAPE

For masking, holding, packaging, backing, hinging, protecting, reinforcing, identifying, splicing, sound-proofing, insulating, stenciling, bundling, sealing, binding

USE SEAMLESS F.O.S. Industrial Tape

Call or Wire

collect for authoritative advice and suggestions. Prices, catalogues, samples on request. Tape to meet govt. specifications. Wire details collect for 24-hour reply.

"Originators of Pressure-Sensitive Industrial Tape"

1877 75th 1952 Anniversary

WIRE INDUSTRIAL TAPE DIV. B

THE SEAMLESS RUBBER COMPANY

NEW HAVEN 3, CONN., U. S. A.

## NAMED DIRECTOR OF NPA PROGRAM COORDINATION DIVISION

John F. Havener has been appointed Director of the Program Coordination Division of the National Production Authority, Washington, D. C. He has been acting Director of the Division since January 15, 1952.

As Director of the Division he will bear a large part of the responsibility for integrating the allotment programs of the various NPA bureaus, as well as for the development of standards for official NPA actions, and the maintenance of liaison with the Defense Production Administration Requirements Committee. He will also continue to serve as Chairman of the Program Task Group of NPA.

## MILITARY SETASIDES OF BAR STEEL TO CONTINUE

Military setasides of bar steel will continue until the end of the emergency, the Hot Rolled Carbon Steel Bars and Semi-Finished Steel Industry Advisory Committee was recently told by members of the National Production Authority. A special study of the set-aside picture is being made to determine whether the percentage of steel capacity held for the military services should be revised up or down, in order to equalize the load on the various producers. It was generally agreed that there will be a tight situation in larger sizes of quality steel bars until the middle of next year.

## STEEL CASTING PRODUCTION NEARS ALL-TIME HIGH

National steel castings production to meet defense requirements is reaching record proportions for the second straight year, according to report by F. Kermit Donaldson, executive vice president of the Steel Founders' Society of America, at the annual fall meeting of that body.

Despite curtailments arising out of the steel strike, Mr. Donaldson said the industry is now producing at a level only slightly under the near-record rate for 1951 when shipments totalled 2,050,054 tons. These figures compare with shipments totalling 1,461,000 tons in 1950, and the all-time high of 1944 during the war-time production peak when the industry shipped 2,445,000 tons.

Since steel castings are classified as a controlled material under the Controlled Materials Plan, a heavy proportion of the industry's production continues to be diverted to fulfilment of direct military and closely related defense - supporting requirements, Mr. Donaldson explained. It has been conservatively estimated that at least half of all defense production is dependent on steel castings, he said.

In addition to military, aircraft and naval requirements, increasing quantities of cast steel parts also are being required for the atomic energy program.

NEED "Special" CHAIN HOISTS?

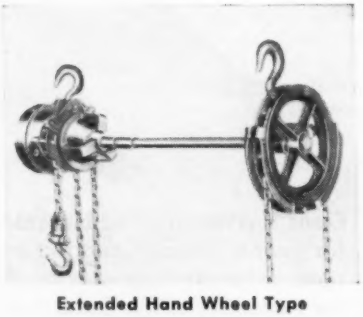
Call on

CHESTER

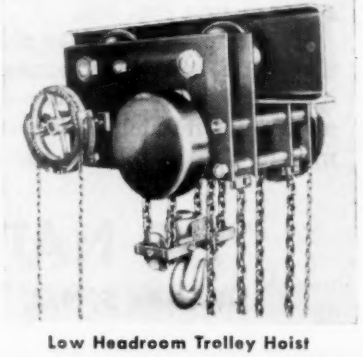
In addition to a complete line of Spur-Geared and Differential Chain Hoists, Chester is in a position to move fast on orders for special types.

For example, we can furnish Low Headroom Trolley Hoists for buildings where no other type of hoist can be used. We can also adapt our standard Spur-Geared Hoists to the Extended Hand Wheel Type—ideal for handling hot materials from a safe distance, for moving work whose surface must be protected against scratching by the hand chain, or for large flat or bulky loads.

Why not ask your distributor, or write us today, for the Chester catalog, and tell us your "special" problems?



Extended Hand Wheel Type



Low Headroom Trolley Hoist

CHESTER HOIST DIVISION

The National Screw & Mfg. Co.

Lisbon, Ohio

# NIBROC® TOWELS

**HANDY!** Nibroc towels are always ready for instant use. They save time in the washroom—speed washroom service—prevent the spread of disease germs—build good will.

**DANDY!** The uniform, dependable quality of Nibroc towels is unexcelled. They absorb water fast, do not shed fuzz or lint, are delightfully soft and pleasant to the touch, and will not come apart in the hands when wet.

**THRIFTY!** *One* Nibroc towel dries *both* hands quickly and thoroughly. Consequently, they last longer—go further—cost less in the long run.

**NIBROC**—world's largest selling paper towel for industrial and institutional use—multifold or single fold, white or natural. Dispensers hold up to 50% more towels—require less servicing.

**WASHROOM POSTERS,** emphasizing importance of personal cleanliness and washroom sanitation, sent free on request.

**SPECIFY NIBROC TOWELS**
*They Dry Drier—Faster!*

BROWN QUALITY COMPANY, Berlin, New Hampshire
CORPORATION, La Tuque, Quebec

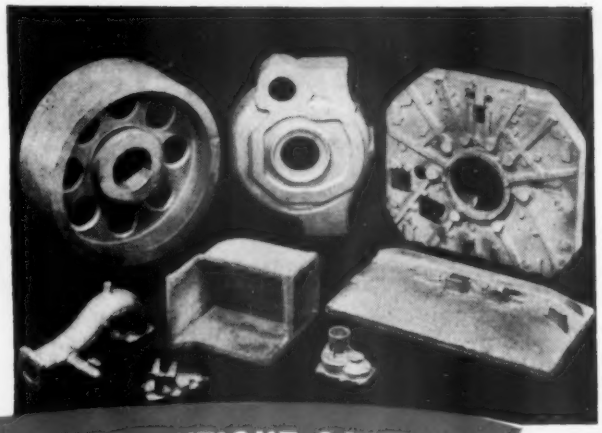
*General Sales Offices: 150 Causeway Street, Boston 14, Mass.*
*Dominion Square Building, Montreal, Quebec*

SOLKA & CELLATE PULPS • SOLKA-FLOC • NIBROC PAPERS • NIBROC TOWELS • NIBROC FOWTOWLS • BERMICO SEWER PIPE, CONDUIT & CORES • ONCO INSOLES • CHEMICALS

BROWN COMPANY, DEPT. GN-11
150 Causeway St., Boston 14, Mass.

Please send me free washroom posters and data on Nibroc cabinets and Nibroc towels.

*Name* _____
*Title* _____
*Company* _____
*Address* _____
*City* _____ *Zone* ____ *State* _____

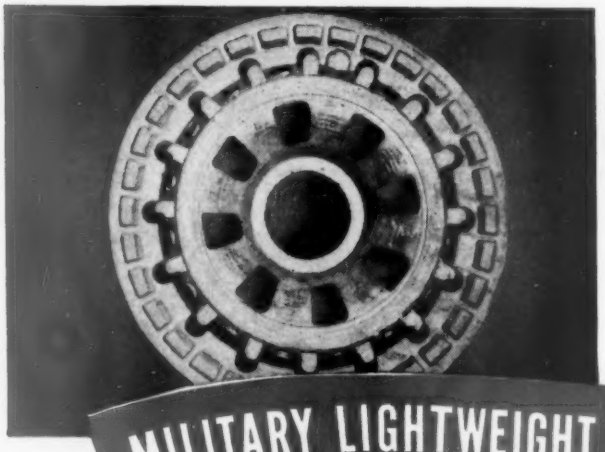


*Well-Cast

COMMERCIAL LIGHTWEIGHT CASTINGS

Your commercial requirements for lightweight castings in aluminum or magnesium may be tough, but we'd welcome an opportunity to look them over. We've tackled a good many diversified casting problems over almost a half century.

Our four completely equipped plants and their trained personnel are at your disposal.



*Well-Cast

MILITARY LIGHTWEIGHT CASTINGS

Aircraft wheels, strut parts, engine parts and miscellaneous components are being made every day at our plants, in aluminum and magnesium. X-Ray inspection, close attention to detail, complete facilities for production in sand, semi-permanent and permanent mold form.

Well-Made Wood and Metal Patterns.
Well-Cast Ampco Bronze Castings.

*Copyrighted Trade Name.

If you would like to receive the Wellman Magazine each month without charge, drop us a note on your business letterhead.

THE WELLMAN BRONZE & ALUMINUM CO.

DEPT.17, 12800 SHAKER BLVD., CLEVELAND 20, OHIO


## CHASE BRASS WELCOMES PUBLIC TO OPEN HOUSE AT CLEVELAND

More than 20,000 visitors—including employees' families, civic groups, and the general public took advantage of an open-house invitation extended by the Cleveland Division of the Chase Copper & Brass Company to visit the company's Babbitt Road Plant and Upson Road Plant, on September 24-25-26, to see how copper, and brass, bronze and other copper alloys are made in the form of rod, bar, sheet, strip, plate, tube, pipe and extruded and drawn shapes. The tour of the mills which combined have approximately 1,000,000 square feet of floor space gave the visitors intimate contact with all operations from castng on through the various processes required for the production of Chase products,—the casting furnaces and molds, annealing and pickling machines, hot mills, finishing mills, tube extrusion press, tube pointer, drawbenches, inspection and packaging.

At the end of the tour, refreshments were served in a special tent set up for that purpose.

## NAMED NPA HEARING COMMISSIONER FOR BOSTON AREA

Warren A. Seavey, professor of law at Harvard Law School, has been named a Hearing Commissioner for the National Production Authority, and will preside at public hearings into charges of violations of NPA orders and regulations in the Boston area. Mr. Seavey was a captain in the U. S. Army during World War I and saw active duty in France. In 1919 he was director of the College of Law of the A. E. F. at Beaune France. He has been a professor of law at Harvard Law School since 1927.

## 1ST QUARTER AUTO RATE IS CMP'S HIGHEST

Manufacturers of passenger cars and trucks have been notified by the National Production Authority that a production level of at least 1.25 million cars and 315,000 trucks, the highest since the inauguration of the Controlled Materials Plan, has been authorized for the 1st quarter of 1953.

At the same time, NPA officials cautioned the industry that this record level is not fully supported by allotments. While manufacturers may be assured of getting sufficient copper and aluminum for 1.15 million cars and 300,000 trucks, advance steel allotments are only 60 percent of 3rd quarter 1952 figures, NPA warned.

As a result of the forced delay in delivering 4th quarter 1952 steel orders, users will get more steel in the 1st quarter of 1953 than they have had in any other quarter under CMP.

This will be made up of steel delivered against 4th quarter orders and all, or a substantial part of steel due under 1st quarter allotments.

# YALE RUBBER MANUFACTURING CO.
## *Announces Completion of*
# NEW HEADQUARTERS FOR INDUSTRIAL RUBBER PRODUCTS

● Our new $1,000,000 home is ready to work for you. Its expanded 85,000 square-foot work area doubles production facilities. The single-story, one-building layout allows time-saving continuous operation. Generous glass areas assure better lighting, ventilation, working conditions . . . aids to superior production.

Our new "assembly-line" production system, designed to meet your development, designing, engineering and manufacturing needs, assures the best possible component rubber parts for your final assemblies. Our experienced engineers, designers and mold and die makers, working in the industry's most modern shops, can ably serve you. If it's quality custom rubber products you need, our expanded facilities offer limitless specialized techniques. Tell us your problems concerning precision rubber parts . . . We will give you the Right answers.

- MOLDED RUBBER
- EXTRUDED RUBBER
- CALENDERED RUBBER
- PUNCHED RUBBER
- BONDED RUBBER

*Adhesion of Rubber to Metal a Specialty*

**YALE RUBBER** *Manufacturing Co.*
SANDUSKY, MICHIGAN

# NOW Ready to Ship

**Our Own Manufactured**
**High Quality, Lamination-Free**

# IMPERVITE

**IMPERVIOUS GRAPHITE**

**Standard ⅞" 1" or 1½"***

# TUBES

**For 28-Day Delivery (or better)**

**Both the extrusion and impregnation are closely supervised in our own plants, to provide the *best* tubes for Falls Industries' full line of Impervite Heat Exchangers.**

***Other Sizes Available**

**You cannot find a more satisfactory tube for replacement or repair. The supply is plentiful.**

**PLACE YOUR ORDER NOW!**

*Falls Industries, Inc.*
AURORA ROAD - SOLON, OHIO


## BULLETIN GIVES TIPS ON EVAPORATION LOSS OF CRUDE PETROLEUM

A bulletin describing methods and equipment for preventing loss of petroleum products through evaporation has been reprinted for the second time by the Bureau of Mines, in response to continuing demand for information on the subject.

Evaporation is a source of great waste in the petroleum industry. Its control is becoming increasingly more important because wells today are being drilled deeper than ever before and such oil is more volatile and evaporates more readily than oil produced from lesser depths.

### Reissue Made

The theory of evaporation, methods of determining losses, lease operation, transportation and storage of crude petroleum, and evaporation losses of gasoline at refineries are all discussed in the bulletin. It was originally published in 1934 but is as applicable to problems today as it was then, and needed no revision for its reissuance.

The average evaporation loss on oil leases should be less than one percent, and could be kept at that low figure with properly maintained and efficiently operated vaportight tanks painted light colors and equipped with vacuum-and-pressure relief valves. However, many operators who use these tanks receive only 50 percent of their rated efficiency because of improper maintenance and operation, according to the Bureau's petroleum engineers.

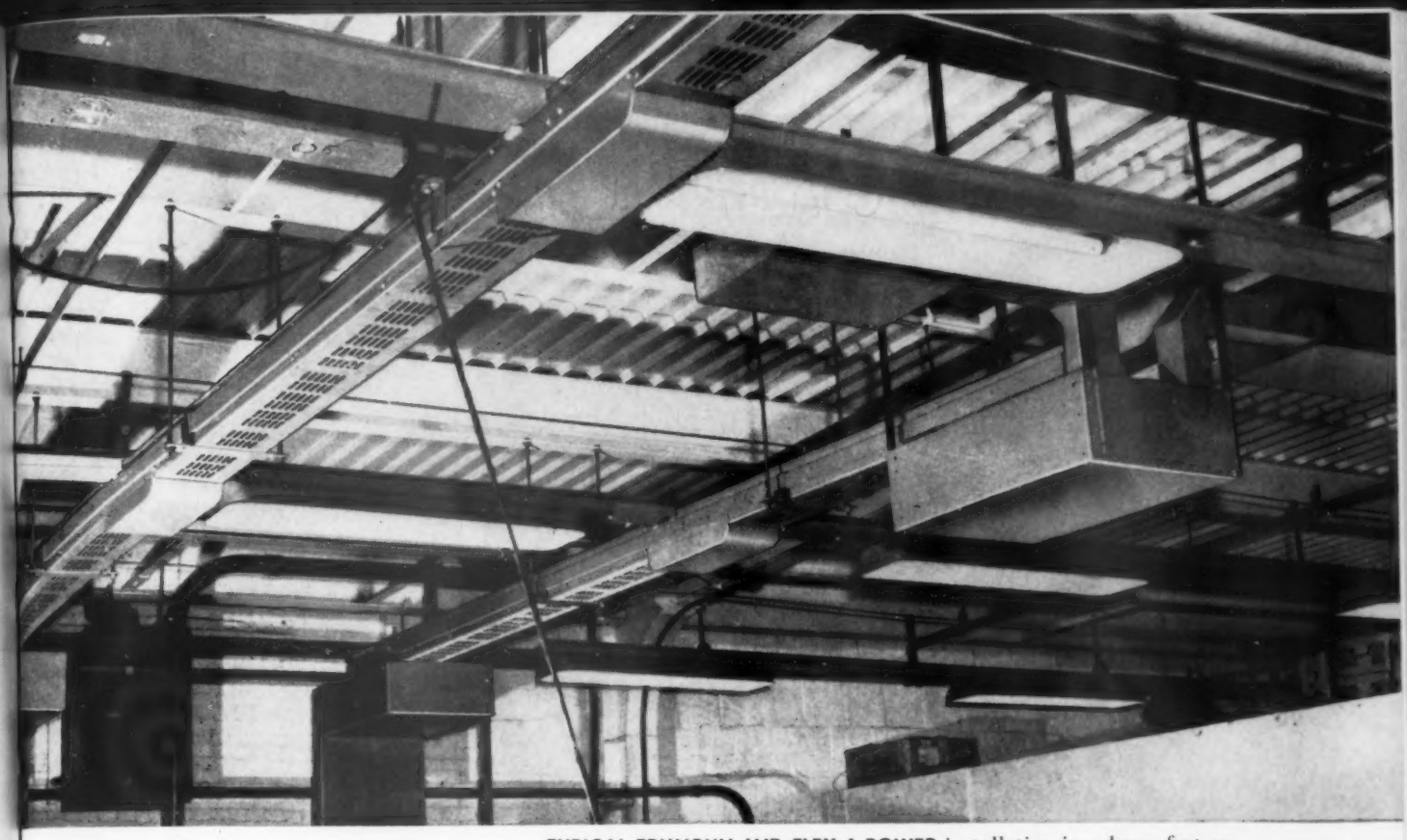
### Copies Available

Copies of Bulletin 379, "Applied Methods and Equipment for Reducing Evaporation Losses of Petroleum and Gasoline," by Ludwig Schmidt, former Bureau petroleum engineer, may be obtained only from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

## CONTROLS ON TIN TO BE CONTINUED

Despite revision of the order affecting tin and terneplate, controls on tin must be continued until supplies of tin coming into the country are sufficient to meet the needs of many small consumers, the NPA stated at recent meeting of the Paint Industry Advisory Committee. However, larger supplies of tin are being received and further revision and eventual revocation of NPA's Order M-24, Tin and Terneplate, is in prospect in the not too distant future.

NPA told the committee that four of the metals used by the paint industry are still in short supply. The metals are selenium, cobalt, tungsten and molybdenum. Chemicals and chemical compounds still short are: paraphenylphenol resin, cobalt salts and driers, copper chemicals, methylene chloride, and selenium compounds. Little improvement in the availability of cobalt and cobalt compounds can be hoped for at the present time, NPA said.



**TYPICAL TRUMBULL LVD FLEX-A-POWER** installation in a large factory.

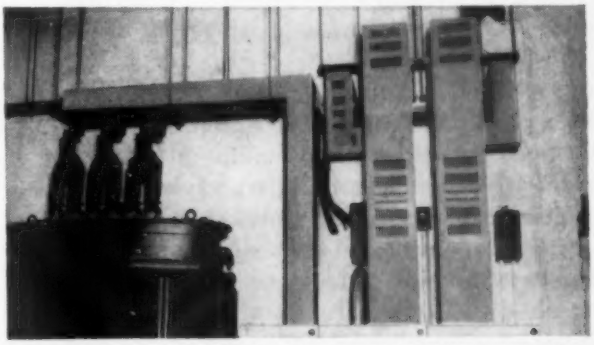
# Modern power distribution made more convenient, more economical!

Industry has long taken advantage of the benefits of Trumbull LVD FLEX-A-POWER. FLEX-A-POWER's economy of installation, efficient performance and complete flexibility have aided in cutting plant overhead costs throughout the nation.

Now, Trumbull Electric offers LVD (Low Voltage Drop) FLEX-A-POWER with *aluminum* busbars — a major contribution to the busway field.

LVD now has the outstanding additional advantage of being 25 to 35% lighter in weight — making LVD FLEX-A-POWER easier to handle and cheaper to install. All joints are silver plated for positive contact and longer life. In many cases there is less voltage drop, which contributes to operating efficiency.

There is no delivery problem with aluminum LVD. Write for complete information.



**ONE OF MANY APPLICATIONS OF ALUMINUM LVD FLEX-A-POWER** is as a feeder from transformer to switchboard.

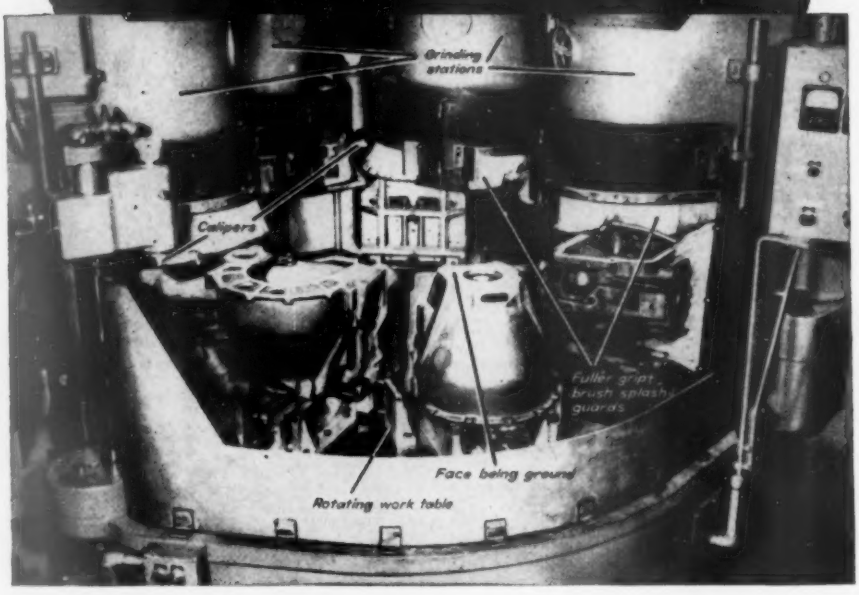
The modern Trumbull LVD FLEX-A-POWER is available with current ratings of from 600 to 3000 amps, in 2, 3 or 4 pole construction, 4000 amps in 2 and 3 pole construction, and is suitable for 600 volt service.

***Trumbull Assures LASTING FLEXIBILITY in Power Distribution***

**TRUMBULL (T) ELECTRIC**

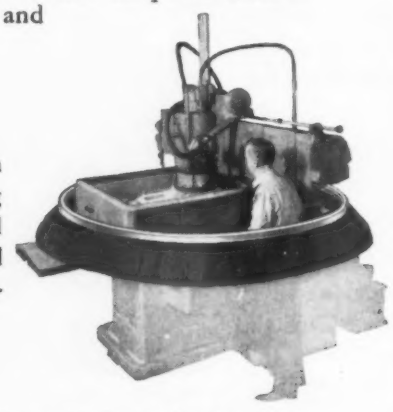
**DEPARTMENT OF GENERAL ELECTRIC COMPANY**
**PLAINVILLE, CONN.**

# ON GUARD To Speed Production




## Fullergript Brushes on Vertical Surface Grinder Keep Work Cleaner . . . Increase Safety and Accuracy

On the vertical surface grinder shown above, Fullergript brushes are used as splash guards to concentrate the coolant on the work . . . and away from the operator. The filler is dense enough to confine the coolant, yet the filaments flex to conform to the contours of the work as it passes under the guard . . . eliminating the need for cutting and fitting special splash guards for each different shaped piece being ground. The result is increased production — cleaner, more accurate work — and no labor problem.



Here you see a Fullergript brush strip mounted on the guard surrounding the grinding wheel of a vertical die and surface grinder. The densely packed brush material is anchored in a rust-resistant metal backing.

Do these applications suggest new cost-reducing ideas to you? Our engineers will be glad to work with you. Just send us your problem, giving as much pertinent data as possible.

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THE FULLER BRUSH COMPANY • INDUSTRIAL DIVISION • 3554 MAIN STREET • HARTFORD 2, CONN.
Wet and Dry Mops, Brooms, Waxes and Polishes, Floor and Special Brushes


### BITUMINOUS COAL STOCKS SET TEN-YEAR PEAK

Bituminous coal stockpiles totaled 81,156,000 net tons as of September 1, or 1,797,000 tons greater than one month previous, according to the latest figures of the Bureau of Mines. This is the largest tonnage on hand since December, 1942, when more than 85 million tons were stocked, and exceeds the former ten-year peak of 80,766,000 net tons held July 1, 1952.

This reported gain in stocks, however, is contrary to other figures which show consumption and exports in August exceeding production by nearly 3 million tons. This difference is probably due, the Bureau says, to coal in transit during the UMWA memorial shutdown in the week beginning August 23.

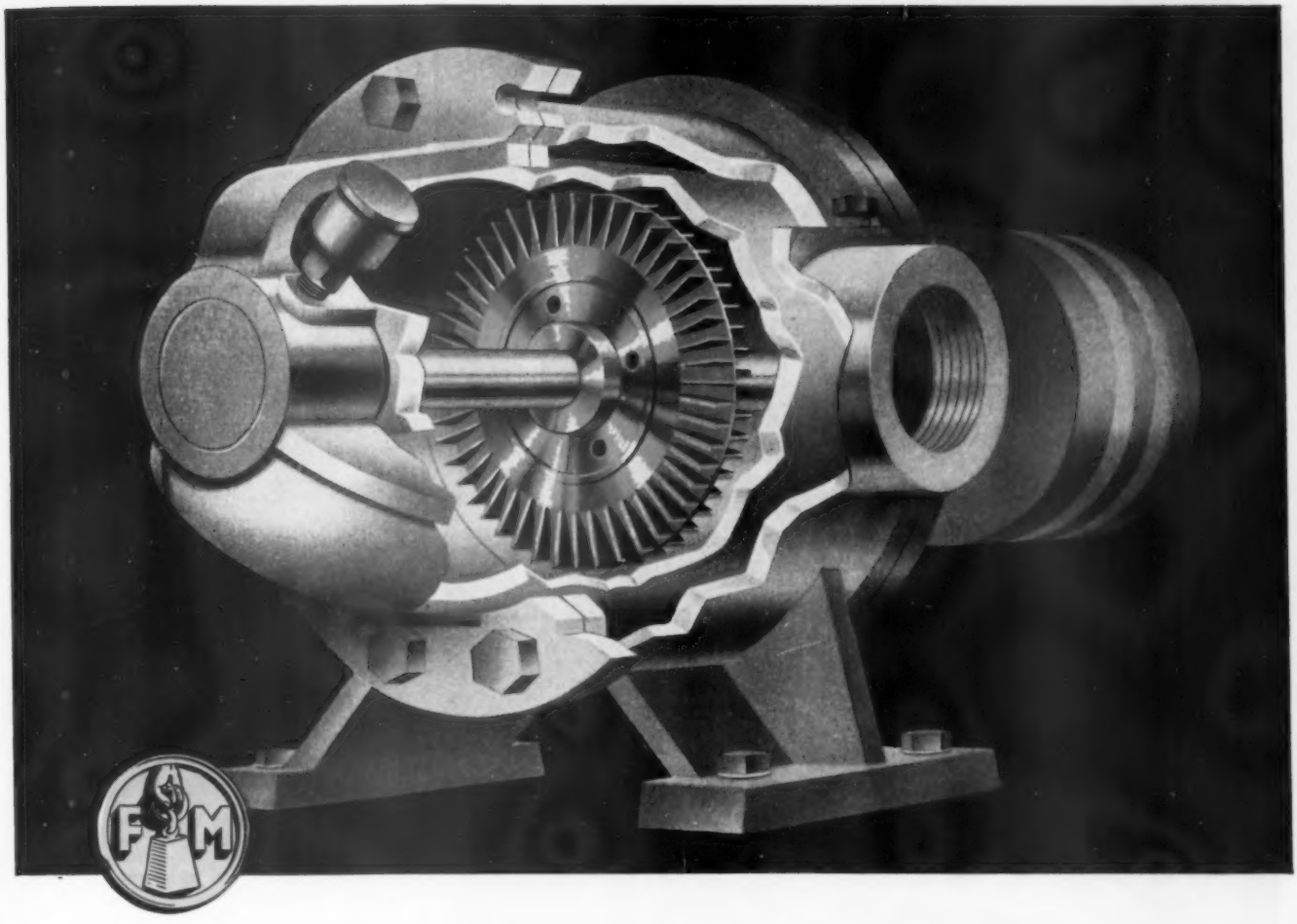
Compared with a year ago, industrial stocks on September 1 are greater by 8.2 per cent, while tonnage in retail yards is less by 13.1 per cent. Compared with one month previous, September 1st industrial and retail stockpiles rose 2.3 and .6 per cent, respectively.

Stocks held by various classes of industrial users, September 1, 1952 compared with a year ago, show gains of 13.6 per cent at electric power utilities; 10.6 per cent at coke ovens; 20.7 per cent at cement mills; and 3.3 per cent at other industrials. The same comparison shows Class I railroads with 20.5 per cent less coal on hand.

Compared with August 1, 1951, industrial users show stock gains, as follows: Electric power utilities 2.5 per cent; cement mills, 11.0 per cent; and other industrials 5.3 per cent. Losses in bituminous stocks between August 1 and the first of September are: Class I railroads, 3.3 per cent; steel mills 3.1 per cent; and coke ovens .9 per cent.

### NEW GLASS FIBER CAN BE USED AS INSULATING MATERIAL

Development of a new glass fiber that can be used as an insulating material is announced by Wm. A. White, Sr., Director of the Miscellaneous Metals and Minerals Division, NPA. The principal insulating material, he explained, is asbestos, and the severe shortage of asbestos fiber necessary to produce certain types of asbestos cloth has seriously threatened various defense programs. This new material, in which staple glass fiber is substituted for a given percentage of crude asbestos fiber in yarn production, will help to alleviate the shortage. The new cloth, Mr. White explained, differs from the combination cloth developed in World War II. The World War II product was composed of alternate strands of asbestos yarn and glass yarn, whereas in the new product each strand of yarn is composed of staple glass fiber mixed with asbestos fiber in the carding process. It is then spun, twisted and woven into the several different types of cloth. As production of the new material increases it will become available for various defense and civilian uses.



# Its heart is its one moving part

***With castings in quality as well as in quantity, National Bearing Division helps its customers make better products.***

When a leading pump manufacturer entrusts National Bearing Division with producing vital pump components, and producing them to the exacting standards required, there are some important reasons why.

This Fairbanks, Morse Turbine Pump combines high pumping efficiency with low pumping costs . . . thanks to close-fitting, precision-machined bronze liners and impellers that are easily replaced on the job, at a big saving over new housings.

These castings—particularly the impeller—have to be "right" . . . free from blow-holes, sand inclusions . . . and must be exceptionally fine-grained. Otherwise lost machining time, before defects are found, can seriously increase production costs.

National Bearing Division was picked to supply castings for the very heart of this Fairbanks, Morse Turbine Pump . . . because of an often demonstrated ability to mass-produce non-ferrous castings to a high standard of uniformity and quality.

If your product requires non-ferrous components, it will pay you to investigate National Bearing Division. We have the foundry facilities and skills that can make important contributions to your product performance . . . with castings in quality as well as quantity. The end result may well save you money, too!

AMERICAN Brake Shoe COMPANY

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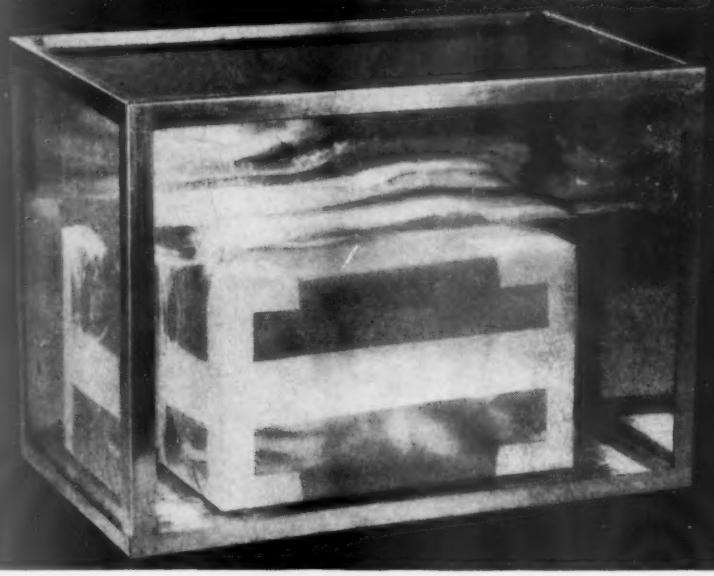
McLAURIN-JONES Product

DROWNING
proves SOLSEAL TAPE
locks out water



Drowned for nine weeks . . . tortured before and after submersion . . . and Solseal Waterproof Tape held a watertight seal. When the tape was finally pulled away, the carton fibres came with it. Proof positive Solseal Waterproof Tape becomes part of a waterproof carton!

Here's a tape that not only seals your merchandise against dust, dirt and gases, but also against water and humidity in extremes of heat or cold.

The secret of Solseal's waterproof bond results from the combination of the special material in the Solseal Tape with those of the Solseal Solvent. This forms a waterproof bond after it has been applied to the carton. It is non-flammable and non-volatile. The solvent can be put in your regular dispensers. You then apply Solseal Tape as you would any other.

Think of your product. Think of your customer's good will. Protect both with the miracle of modern packaging . . . Solseal Waterproof Tape!

**Super-strong Glaskraft Solseal Tape**

is embedded with glass fibres. This boosts tensile strength, gives you a tape that can take more than the carton it seals.

Both 30/30/30 SOLSEAL and GLASKRAFT SOLSEAL meet requirements of joint Army-Navy Spec. J.A.N.—P—128 and U.S. Bureau of Standards UU-T-116.

**McLAURIN-JONES CO.**
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Makers of famous Tanglefoot and Blue Star Sealing Tapes, Glaskraft Strapping Tape, Ideal Stay Tape and a wide range of corrugated box tapes.
Offices in New York, Chicago, Cincinnati, Los Angeles.
Mills located at Brookfield and Ware, Mass., Grand Rapids, Michigan and Homer, La.

## NEW CASTING IMPREGNATION METHOD FOR SALVAGING POROUS CASTINGS

A new impregnation method for salvaging porous castings, which is claimed to make for savings of materials, production time and machining time, was among the various exhibits at the annual Metal Show in Philadelphia. The method utilizes a new type of specially formulated thermosetting resin in a combination vacuum and pressure process, developed by Polyplastex International, Inc., 441 Madison Avenue, New York. The resin provides a 100% solids sealant and does not give off gas or shrink when baked, all of the resin impregnated in the cores becoming a solid with excellent physical and chemical properties.

Basket of cast parts being removed from vacuum-pressure vessel after impregnation.

Both ferrous and non-ferrous metals can be economically processed by the method, and it is stated that perhaps its greatest use is in aluminum and magesium castings, since microscopic flaws are particularly prevalent in low-density materials.

The impregnating resin is resistant to a wide variety of solvents, water, salts, hydrocarbons and glycols, as well as acids and weak alkalis, and can withstand continuous exposure to temperatures up to 350 F.

The vacuum-pressure method of impregnation utilizes a tank in which the castings are placed. The tank is closed and a minimum vacuum of 29 in. (mercury) is applied. The sealant is brought into the tank to cover the castings and 100 psi of air pressure is applied to the fluid head, forcing the sealant into all microporous areas. After impregnation, the castings are removed from the tank, their surfaces cleaned, and then put into an oven to be cured. No surface stain or film is left by the process.

◆ ◆ ◆

## TRANSCRIPT OF PRESSED METAL MEETING NOW AVAILABLE

Tooling for Short Runs, Estimating Factors and Cost Analysis for Intelligent Stamping Quotations, Technical Knowledge for Stamping Salesmen, and Practical Quality Control for Stamping Plants, are subjects of sessions of the Third Spring Technical Meeting of the Pressed Metal Institute, now available in Transcript form from the Institute, 2860 East 130th Street, Cleveland 20, Ohio. The cost is $5.00 per copy.

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Set Screws
180 inch-pounds
180 inch-pounds applied to this end broke shaft, while gear locked to shaft with "Nu-Cup" Set Screws still held.
40 inch-pounds
ZENITH ORDERS Nearly a MILLION "NU-CUPS" for TV sets after making this severe test:
This order is typical of the enthusiasm for the latest "Setko" innovation, "Nu-Cup" Set Screws. As the diagram demonstrates, the "Nu-Cup" design of cup point makes possible greatly increased holding power with the same amount of setting torque. Use of the "Nu-Cup" is especially recommended where shaft is soft . . . or is small in relation to contact arc of screw cup. The "Nu-Cup" design is available—in Stock—in Slotted Headless and Slabbed Head Type Set Screws ONLY.
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New Catalog—giving full details on Setko, Zip-Grip* and "Nu-Cup" Set Screws.
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142 Main St. Bartlett, Ill. (Chicago suburb)
We specialize in Solving Puzzling Set Screw Problems


## NEW FURNACES INCREASE INLAND STEEL PRODUCTION 20%

First step in an expansion program which will lift steel making capacity of Inland Steel Company by 20% was completed recently when one of four new open-hearth furnaces was put into production at the company's Indiana Harbor Works. The other three are scheduled for completion by the end of the year. These four new open-hearths of 250-tons capacity each, will bring to 40 the total of steel making furnaces at the Inland plant. They will increase the annual capacity of the plant from a present 3,750,000 tons of steel ingots to 4,500,000 tons. Steel from the new furnaces will be rolled on the company's present mills.

## NEW OFFICES OPENED BY SDPA AT NASHVILLE AND OMAHA

Opening of a field office in Nashville, Tenn., is announced by the Small Defense Plants Administration. The office will operate as a branch of the regional office in Atlanta, and will be under the direct supervision of Hugh W. Mitchell of that city. James Edward Jennings, has been named acting head of the Nashville office which is located at 114 Ninth Avenue, South.

Also, a field office has been opened in Omaha, Nebr., with Wm. H. Casey as Industrial Specialist in charge, at the Omaha Chamber of Commerce, 108 South 18th Street. It will be operated as a branch of the Kansas City Regional office, and will be under the general supervision of Roy W. Webb.

## NAVAL RESEARCH DEVELOPS FOAM FIRE-FIGHTING JEEP

A new foam fire-fighting jeep designed for use on aircraft carriers was recently demonstrated by the Naval Research Laboratory. Operated by two men, the jeep can deliver 1300 gallons of foam per minute for over two minutes, with an adjustable nozzle throwing foam over 30-foot circle, or in distances of 90 feet. The new equipment has knocked out 150-gallon gasoline fires in 24 seconds. It can be produced for about $5,000. Details are available from Navy Technical News, Office of Information, Navy Department, Washington, D. C.

## NAMED DEPUTY DIRECTOR CHEMICAL DIV., N.P.A.

T. C. Keeling, Jr., assistant vice president and Chemical Division sales manager of Koppers Company, Inc., Pittsburgh, has been appointed Deputy Director, Chemical Division of the National Production Authority, Washington. The division is responsible for distribution controls on chemicals vitally needed in the defense effort. During Mr. Keeling's absence from his duties at Koppers, C. H. Pottenger, assistant sales manager of the division will serve as acting manager.

# "We put in 4,000 outlets in less than a day!"

## REPORTS H. M. TOOMBS, CHIEF ENGINEER OF THE WORLD'S LARGEST HOTEL

To meet the power and lighting demands of convention displays, 2000 feet (4000 outlets) of National Electric "Plug-In" Strip were recently installed in the Exhibition Hall and Foyer of Chicago's Conrad Hilton Hotel. In speaking of this job, Mr. Toombs said:

*"Plug-In Strip provides us with the most flexible wiring system we have ever encountered. It's quick and easy to install. This installation took less than a day to do—and we do it approximately 36 times a year!"*

If you need a *fast* installation of a multitude of outlets, investigate "Plug-In" Strip—the all-steel, pre-wired surface raceway providing electric outlets every 6" or 18." Comes ready to install. Eliminates costly behind-the-wall wiring. Safe, permanent, attractive. Listed by Underwriters' Laboratories, Inc.

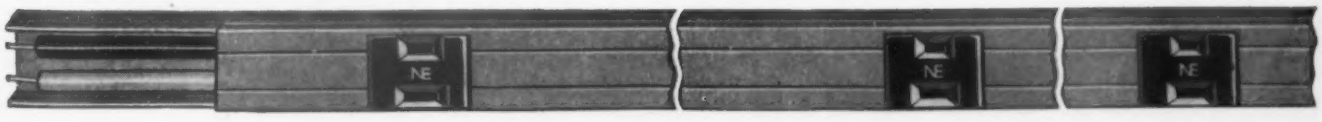
"Plug-In" Strip is the answer to convenient, adequate wiring for *Homes—Stores—Institutions—Factories—Laboratories—Offices—Apartments—Hotels.* "Plug-In" Strip has quickly and economically solved many interesting wiring problems. Write for complete information.

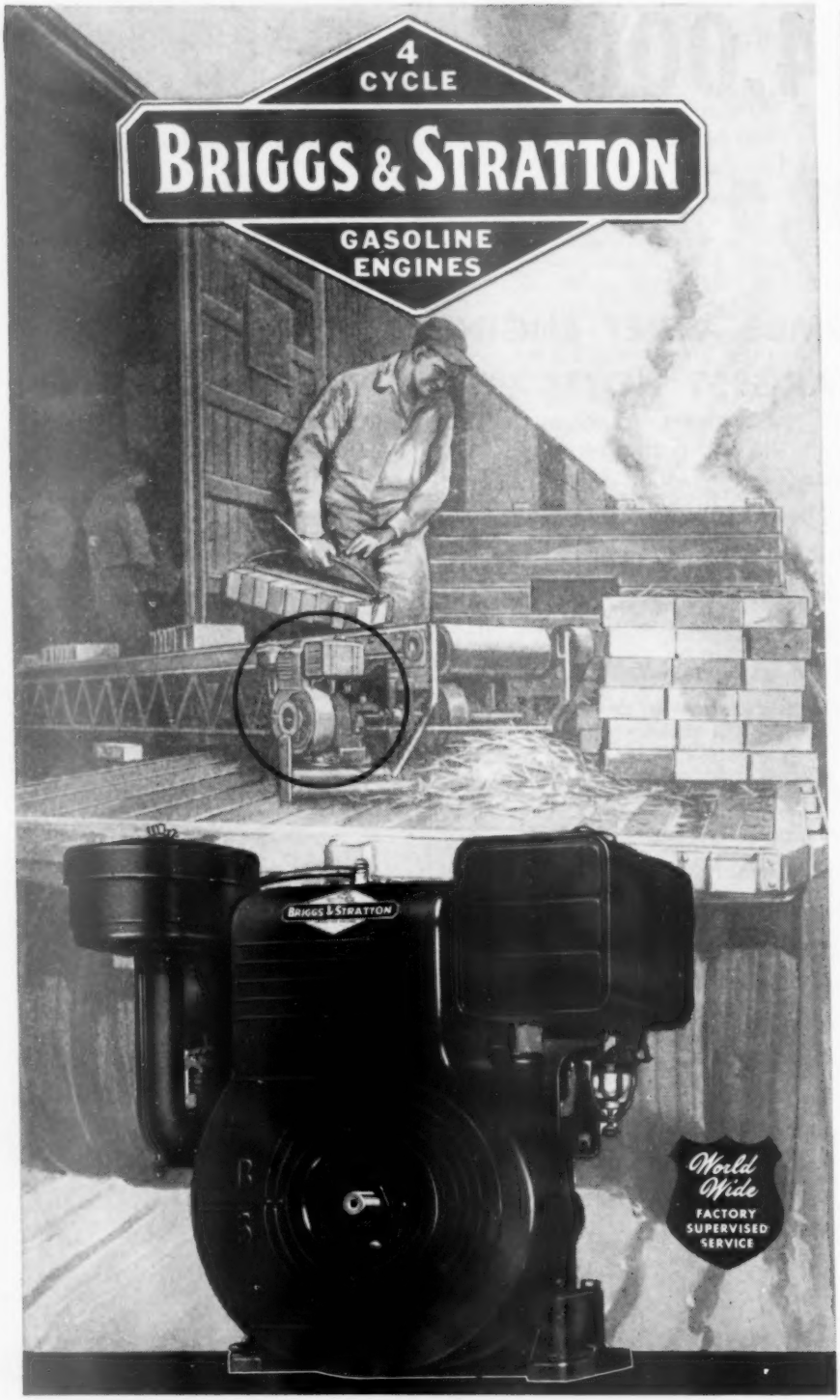
EVERYTHING IN WIRING POINTS TO

**National Electric Products**

PITTSBURGH, PA.

*3 Plants • 7 Warehouses • 42 Sales Offices*






*Preferred power on portable conveyors for economically moving bulk materials! These are the world's most widely used single-cylinder gasoline engines on hundreds of kinds and types of machines, tools and appliances. They are preferred by industry, construction, railroads, oil fields, and on equipment for farms and farm homes.*

WHEREVER you find gasoline powered equipment doing the job better, faster — invariably the power is Briggs & Stratton. These single-cylinder, 4-cycle, air-cooled gasoline engines are leaders in the field and preferred for dependable power the world over. Briggs & Stratton Corporation, Milwaukee 1, Wisconsin, U. S. A.

**In the automotive field Briggs & Stratton is the recognized leader and world's largest producer of locks, keys and related equipment.**

## AMENDMENT MAKES MORE BRASS MILL PRODUCTS AVAILABLE

Distributors of brass mill products now are able to sell and accept orders for increased amounts of their products on a single sale and for any item ordered, under an amendment to Order M-82 (Distribution of Brass Mill Products to Distributors) issued by the National Production Authority, Department of Commerce. The action involves two steps:

1. It removes the restriction in Section 6(a) of the order which prevents a distributor from selling more than 2,000 pounds of brass mill products on any one sale without specific authorization from NPA. Formerly, distributors had to secure approval from NPA on sales of this type.

2. It changes the regulation to state that no distributor shall be required to accept an authorized controlled material order for more than 2,000 pounds of any brass mill product or 50 percent of the distributor's inventory of such item, whichever is less, unless otherwise directed by NPA. This latter provision raises the former amount of 500 pounds to 2,000 pounds.

In addition to benefitting all distributors of brass mill products by allowing them to return to a more normal pattern of business, the customers of these distributors will be substantially benefitted by being able to obtain larger supplies of controlled materials locally, NPA pointed out.

This will be especially beneficial to small business.

Additional information may be obtained from Commerce Department field offices.

## NEW NPA DIVISION RESPONSIBLE FOR CIVILIAN REQUIREMENTS

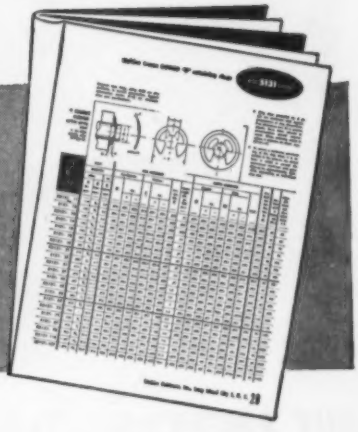
R. A. McDonald, Administrator of the National Production Authority recently announced that the Office of Civilian Requirements has been abolished and that its functions and staff are being transferred to the new Office of Distribution, Department of Commerce, and to a new Civilian Requirements Division in NPA's Policy Coordination Bureau. Leslie P. Doidge will act as director of the new Civilian Requirements Division which will continue all the essential defense functions previously performed by NPA's Office of Civilian Requirements.

The new NPA division will be responsible for defense production activities related to civilian requirements for consumer products and civilian production programs. It will also provide assistance to state, county and local governments, to wholesale, retail and service trades, and to private and religious institutions on materials problems arising from the defense program.

The division will be concerned with maintaining an adequate supply of essential civilian products, services and facilities so that the highest productive efficiency of the civilian population may be obtained in support of the defense program.

# FREE to every engineer with an industrial fastening problem! The most complete catalog on retaining rings ever published!

**This encyclopedia of retaining rings** combines—*in one 52 page volume*—engineering specifications and data for 17 different ring types—more than 600 different sizes. Gives assembly data, typical applications, everything you need to know about selection and use of Waldes Truarc Retaining Rings.



**28 pages of charts giving complete engineering data and specifications.** Dimensions of Rings, Grooves, Shafts, and Housings; Clearances; Allowable Thrust Loads; Safety RPM Limits. Data on end-play take-up. Countless other engineering data, arranged in easy-to-read, easy-to-use table form.

**6 pages showing typical cost-cutting applications and case histories,** covering self-locking rings; basic type rings; rings for taking up end-play; rings for radial assembly; and special rings.

**5 pages showing drawings of assembly and accessory tools,** designed to handle Truarc retaining rings on a speedy, production line basis. There are data on tools for recessing grooves, pliers and applicators for assembly, and the new Truarc "E"-ring dispenser. **You will find the new Waldes Truarc Retaining Ring Catalog** *invaluable* in selecting and specifying Truarc retaining rings, the better way to hold parts together.

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## RETAINING RINGS

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WALDES TRUARC RETAINING RINGS AND PLIERS ARE PROTECTED BY ONE OR MORE OF THE FOLLOWING U. S. PATENTS: 2,382,947; 2,382,948; 2,416,852; 2,420,921; 2,428,341; 2,439,785; 2,441,846; 2,455,165; 2,483,380; 2,483,383; 2,487,802; 2,487,803; 2,491,306; 2,509,081 AND OTHER PATENTS PENDING.

MAIL THIS COUPON TODAY FOR YOUR COPY!

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Please send the new complete Waldes Truarc Retaining Ring Catalog. (PLEASE PRINT)

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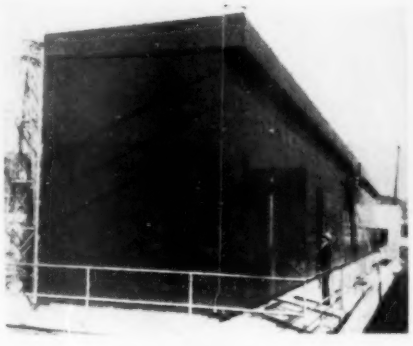
### PAINT INDUSTRIES SHOW CHICAGO — NOVEMBER 18-22

Fourteen companies will cooperate in an exhibit of lacquer techniques, equipment, and raw materials at the Paint Industries Show, which is to be held at the Palmer House in Chicago November 18-22. The Lacquer Information Center will present the latest developments in nitrocellulose lacquers. Visitors will be able to learn about the latest methods of application, durability, developments in furniture finishing, equipment news, military lacquers, new emulsion techniques, and aersol formulations. One of the more recent developments in lacquer is aerosol lacquer, and at least three manufacturers of these lacquers will have representative samples of their products on display.

### SHEET METAL HOUSES OUTDOOR DISTRIBUTION SWITCHGEAR



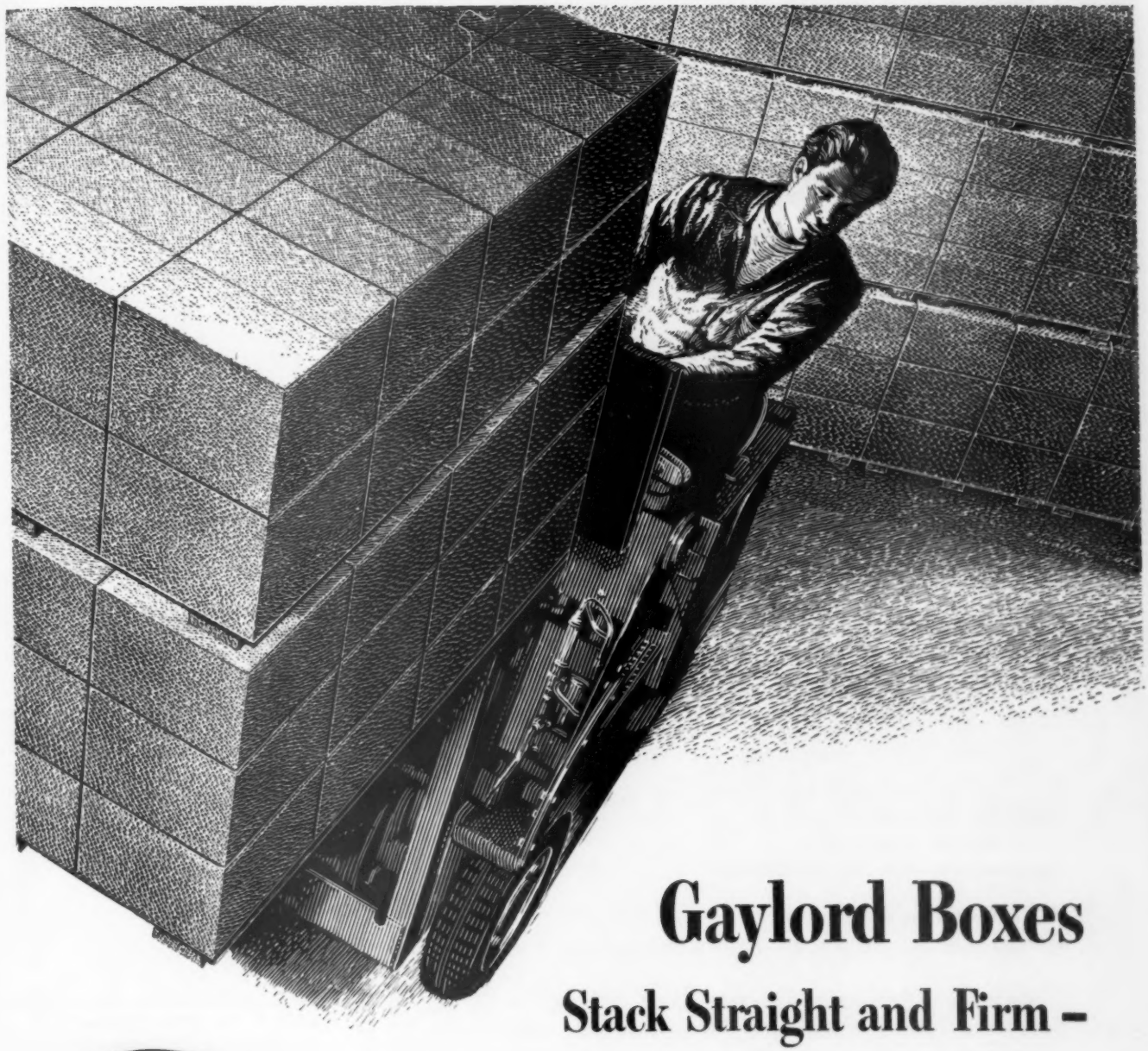
Houses cost money. Hence, if station switchgear apparatus can be used without the usual buildings of brick or concrete and steel, economies become considerable. The City of Seattle has installed the circuit breakers, switches, and associated apparatus for a 14-circuit station of their 26-kv distribution system in sheet-metal enclosures. These are necessarily weatherproof, but much lighter, smaller, and less costly than a conventional building. The breakers are conventional indoor-type, 34.5-kv, compressed-air circuit breakers.

### PLASTIC PIPING SAVES TWO TONS OF COPPER ON NAVY SHIP

About two tons of copper per ship will be saved on minesweepers now being built for the Navy by the use of plastic piping. The plastic pipe in the 2" size is about 70 cents per foot, compared with 1.55 for copper-nickel and $2.25 for stainless.

The Bureau of Ships has announced that in an 8-month test aboard a destroyer escort, plastic pipe held up where metallic piping gave way due to corrosion, shock and vibration. The pipe is fiber glass tape impregnated wth plastic.

Details are available on request to Technical News Letter, Magazine and Book Branch, Room 2C765, The Pentagon, Washington 25, D. C.



# Gaylord Boxes

## Stack Straight and Firm – Save Time and Labor in Handling

*Their unseen quality gives you an extra margin of safety.*

The strong, rigid corrugations of Gaylord Boxes plus their accurate scoring assure flaps that close perfectly.

This controlled quality means a real saving of time and labor—as well as tempers—on the production line as well as in the warehouse.

Gaylord's Research and Engineering Division is at your service. Check with the sales office nearest you for the latest developments in packaging for your industry.

## GAYLORD CONTAINER CORPORATION

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**CORRUGATED AND SOLID FIBRE BOXES • FOLDING CARTONS • KRAFT BAGS AND SACKS • KRAFT PAPER AND SPECIALTIES**

IN PEACE TIME
DEFENSE TIME
EVERY TIME

MAKE "Standard" YOUR SOURCE
FOR WELDED TUBING EFFICIENTLY PRODUCED!

Specially Designed
New Modern Plant with
Complete Facilities for Production of:

★ Welded Mechanical ★ Boiler and Heat Exchanger
★ Welded Stainless ★ Exclusive "Rigidized" Patterns

Complete Range of Electric Weld Tubing for
Structural, Mechanical and Pressure Applications

Here in this great new plant are the most modern and complete facilities for the manufacture of Welded Steel and Stainless Steel tubing found anywhere. Let "Standard's" specialists help you!

THE STANDARD TUBE CO.
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Welded Tubing Fabricated Parts
STANDARDIZE with STANDARD — It Pays

ROUND • SQUARE • RECTANGULAR • SPECIAL SHAPES
Including UPSET • FLARED • FLANGED • TAPERED

STEEL TUBING SIZES: ½" O.D. to 5½" O.D. .028 to .260 wall
STAINLESS SIZES: ⅜" O.D. to 3" O.D. .028 to .095 wall

## HIGH TEMPERATURE LUBRICANTS DEVELOPED BY ONR

New high temperature lubicants developed by the Office of Naval Research in a cooperative study with leading manufacturers of motors, bearings, and lubricants, will permit continuous operation of electric motors at 300 degrees F. with relubrication required at intervals of between 500 and 1000 hours. Motor design changes indicated by the study will greatly increase these intervals. The silicone-lithium soap greases have given good performances for as high as 6000 hours, at 100 degree temperatures stood up to 10,000 to 15,000 hours. Military specification incorporating findings of this study have been issued by the Bureau of Ships. Factors to be considered in future design are: seals or shields to prevent bearing grease loss, ball cages of selected non-ferrous metals, and use of bearing steels stable at higher temperatures.

Details are available upon request to Navy Technical News, Office of Information, Navy Department Washington 25, D. C.

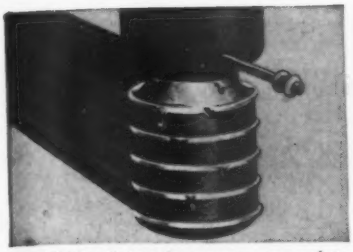
## DISCONTINUE $10 DEPOSIT ON 55-GAL. 18-GAUGE STEEL DRUMS

The American Cyanamid Company's Industrial Chemicals Division recently announced that it will discontinue the $10 deposit on all 55-gallon, 18-gauge steel drums that still carry this charge. The moves covers textile specialties, including Aerosol 18 and C-61, all sulfonated oils, softeners, anti-foams, and liquid acrylic polymers; and paper products including Parez resins, Alwax sizes, Waxine sizes, Aero sizes and other paper products.

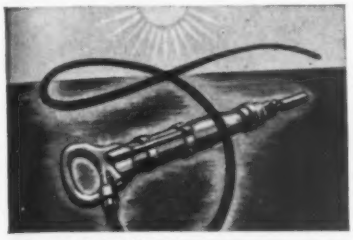
## NEW PROCESS TRANSFERS COLORED IMPRESSIONS TO RUBBER, PLASTICS IN ONE OPERATION

For the first time in the history of the graphic arts, a process has been devised to transfer a multi-colored, printed, screened impression from paper to rubber or plastics in just one swift operation, according to American Anode, a division of the B. F. Goodrich Co., Akron. Most important feature of the process, which is known as the Anolith method, is that it permits true reproduction, in color if desired, of an image of even 300-line context. It has been tested with unusual success in effecting the transfer of inked indicia from paper labels to rubber and some plastic surfaces. A separate printed label is required for each transfer, however, since the process is an ink-lifting method.

Possible applications indicated include various sidewall color combinations for tires, drapery patterns for vinyl sheeting, imprinting of conveyor belting and rubber matting, sundries items, recreational items, and others. The process is said to be economical, rapid, and once the transfer of the indicia is made, the image will last indefinitely. Multi-colored impressions transferred by the process are claimed to remain brilliant and sharp.

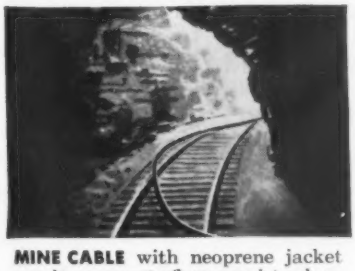


**V-BELTS** of tough neoprene resist attack from grease and oils.

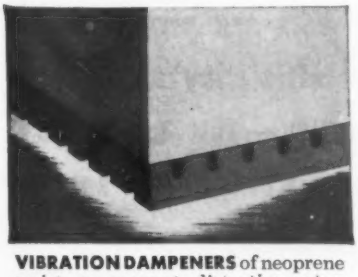


**AIR HOSE** with neoprene cover resists sunlight, weathering, aging.

**CONVEYOR BELTS** of neoprene resist heat, have long service life.



**MINE CABLE** with neoprene jacket won't propagate flame, resists abrasion, cutting, chipping.



**VIBRATION DAMPENERS** of neoprene resist permanent distortion, stay resilient, last longer.

# NEOPRENE PRODUCTS LAST *LONGER*

**...give outstanding service where many other resilient materials fail**

***Ask your supplier*** about neoprene's performance in products like V-belts, conveyor belts, gaskets, hose, protective coatings, and motor mounts. He'll be glad to tell you about case after case where *neoprene* was the answer to a difficult production or maintenance problem. Although Du Pont makes no finished goods of neoprene, perhaps we can be of assistance in determining the resilient material you should use. Write to: E. I. du Pont de Nemours & Co. (Inc.), Rubber Chemicals Division S-11, Wilmington 98, Delaware.

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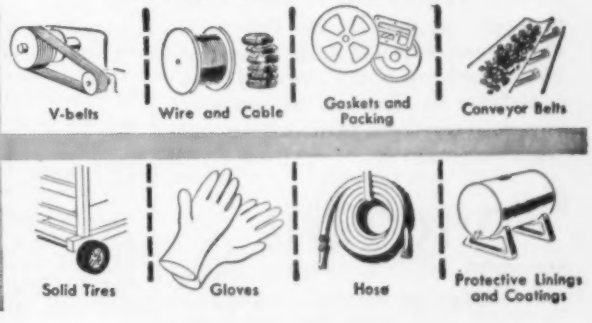
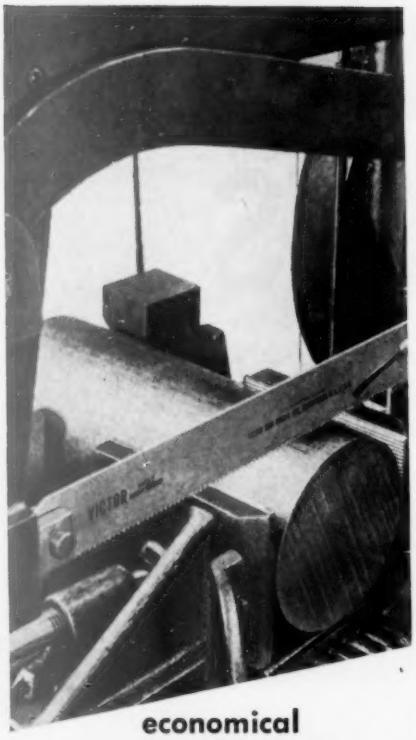
***Specify* Neoprene *in these products:***





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Whatever your metal cutting problem, VICTOR "Moly"® High Speed Power Blades will cut your initial blade cost 15%, and give you the additional economy of more efficient cutting.

Quality makes VICTOR Blades industry's preference—top-quality, carefully heat-treated steel, fabricated on specially designed equipment, to give you fast, economical cutting and long blade life. Send for the free VICTOR Metal Cutting Booklet which tells you how to pick 'em—Gold "Moly"® High Speed or Silver Unbreakable High Speed.

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*Makers of Hand and Power Hack Saw Blades, Frames and Metal Cutting Band Saw Blades*

## ALLOCATION CONTROL ON USE OF TUNGSTEN AND MOLYBDENUM ELIMINATED

Allocation control on the use of pure tungsten and pure molybdenum has been eliminated by amendment to NPA Order M-81. Both materials now are in adequate supply to meet military, AEC, and defense-supporting and civilian requirements, NPA said. However, the amendment does not liberalize the uses of pure molybdenum, pure tungsten and their chemicals nor increase their consumption; and it does not apply to ferro-tungsten or to the other similar forms of molybdenum such as ferro-molybdenum and the oxide. NPA will continue to enforce the use prohibitions in M-81.

## TO UNWATER AND EQUIP COPPER MINE AT CALUMET, MICH.

The Calumet & Hecla Consolidated Copper Company of Boston announces it will unwater and equip its Osceola Lode mines, located at Calumet in the heart of the Michigan Copper country. Under an agreement with the Defense Materials Procurement Agency the estimated production during th next ten years of 106,000,000 pounds of copper will be sold for a minimum price of 25.25 per pound.

The mines, which were first opened in 1879, were shut down during the depression of the 30's, when copper dropped to a low of 4.75 per pound. The cost of rehabilitating the mines is placed at $6,000,000. It is estimated that it will take 18 months to unwater the mines, and that 2½ years will elapse ere the mines are in production. Then capacity production of over 14,000,000 pounds of copper per year will be reached by the end of 1955. Since this copper will replace production from several of the company's other mines, which are expected to be exhausted within the next few years, no over-all increase in production will result.

## REPORT ON ALUMINUM ELECTRICAL CONDUCTOR

The National Electrical Contractors Association announces the publication of a "Report on Aluminum Electrical Conductor," which it states was prepared with the aid of the electrical industry and the government construction agencies. Since aluminum is not as well understood as copper for electrical uses, the report points out the problems involved and what can be done about them. It also explains the factors that govern the choice between aluminum and copper in electric wire, cable and bus. Most serious problem in using electrical conductor is that of connecting it, the report states. In conclusion it advises that the choice of aluminum or copper electrical conductor is based on over-all cost and the use for which it is intended. Copy of the report is available from the National Electrical Contractors Association, 1200 18th St., Washington 6, D. C.

Darnell CASTERS

It's easy to select the right caster to meet your exact requirements from the Darnell line. There are nearly 4000 models from which to choose. All Darnell Casters and Wheels are pre-tested for efficiency and durability—you are assured a long life of satisfactory service.

FREE Manual

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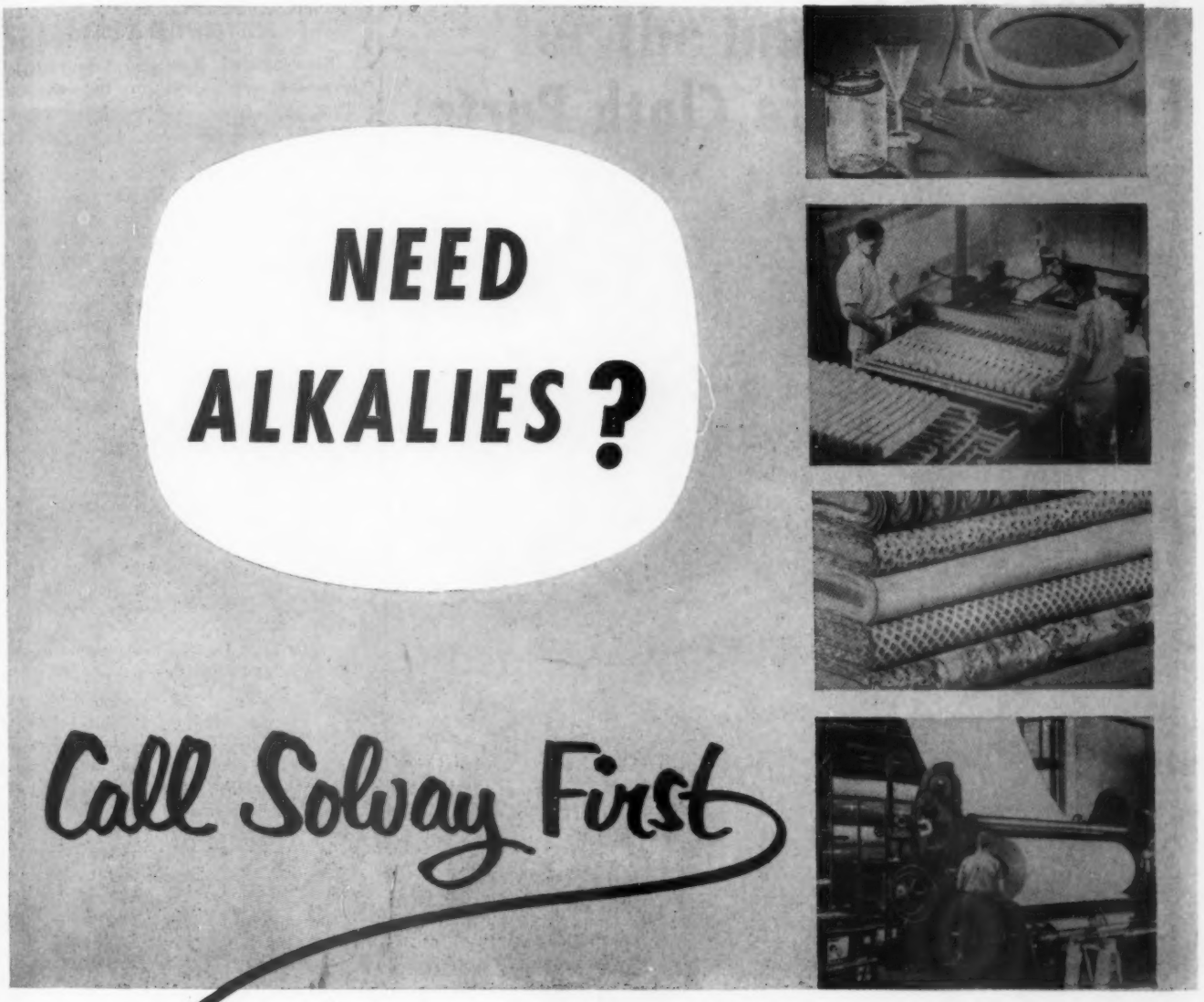


**Because** Solvay gives you the dependable quality and uniformity of America's oldest and largest producer of alkalies.

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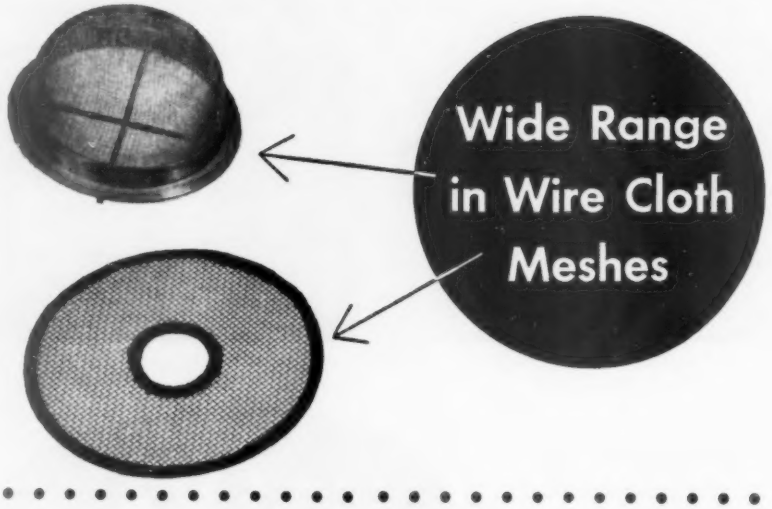
| Sodium Bicarbonate | Monochlorobenzene |
| Specialty Cleansers | Ammonium Chloride |

# NEWARK
## Fabricated Wire Cloth Parts




We have the facilities and skilled workers to make a great variety of wire cloth parts. We're doing a lot of work along these lines. We do the assembling in our own plant, using our own well known "Newark" Cloth. We bring to this work experience gained by several generations of wire cloth manufacturing and many years experience in fabricating and assembling parts. We'll be glad to quote on your next requirements. If you would like suggestions as to how best make use of wire cloth in the assembling we'll be glad to help. Send us an outline or print of your problem.

NEWARK for ACCURACY

**Newark Wire Cloth COMPANY**

351 VERONA AVENUE • NEWARK 4, NEW JERSEY

Philadelphia 3, Penna. 1311 Widener Bldg. | San Francisco, Calif. 3100 19th St. | Chicago, Ill. 20 N. Wacker Dr. | New Orleans, La. 520 Maritime Bldg. | Los Angeles, Calif. 1400 So. Alameda St. | Houston, Texas P. O. Box 1970


### ANNOUNCE FIRST BLOW-MOLDED POLYETHYLENE JARS

Blow-molded, lightweight polyethylene jars—for application in the cosmetic, drug and other fields—have been announced by Plax Corp., West Hartford, Conn. The new containers, believed the first polyethylene jars to be blow-molded, have a capacity of four ounces.

Available in a range of colors, the new, one-piece Plaxpak jars can be printed or labeled with special embossed surface effects such as lettering, designs or panels. In addition to being unbreakable, the new jar is up to one-tenth the weight of many of its glass counterparts.

**The 4 oz. jar is one tenth the weight of its glass counterpart**

The jars are resistant to most chemicals. If the contents within the jar freeze, the walls of the container will simply flex, thereby averting costly breakage accidents. Polyethylene's soft translucency makes the color of the product a part of the jar. Pleasant to the touch, water does not adhere to the surface of the plastic, thereby making possible a slip-proof package.

Blow-molded with a ridge around the bottom, the uncapped jars may be shipped with the neck of one around the ridge of the jar in front of it. This design feature saves shipping space. Jars with capacities other than four-ounces may be available in due course.

### BOOKLET DESCRIBES EMPLOYEE SUGGESTION SYSTEMS

How small manufacturing concerns can use employee suggestion systems to cut costs, increase efficiency and build better relations between management and employees is explained in new booklet issued by the Small Defense Plants Administration. The booklet "An Employee Suggestion System" is available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. for 15 cents—do not send stamps.

### ICC APPROVES POLYETHYLENE CARBOY FOR HYDROFLUORIC ACID

The Interstate Commerce Commission has approved the polyethylene carboy as a package for hydrofluoric acid of not over 60% strength according to the Plax Corporation, West Hartford, Conn. Specification ICC-IF has been issued covering the polethylene carboy. The 6½ and 13-gallon plastic bottles, which are blow molded, are assembled with outer plywood jacket into the complete ICC-IF carboy unit.

# Specify GLOBE for the finest steel tubes

Globe's Physical Testing Laboratory — one of the seven different research and testing labs in Globe's House of Science.

## Specialized research, engineering and production assure uniform high-quality STEEL TUBES

AT Globe, specialization is the keynote. Men, machines, and raw materials are all tailored to fit the Globe *specialized* process. Precision checks — and rechecks — at every stage of production insure Globe Tubes that meet *your* exacting specifications.

Be sure! Specify dependable, high-quality Globe Steel Tubes and be certain of getting the finest tubes available. Write for the General Catalog and become acquainted with Globe *specialized* process.

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**GLOBE STEEL TUBES ARE AVAILABLE IN:**

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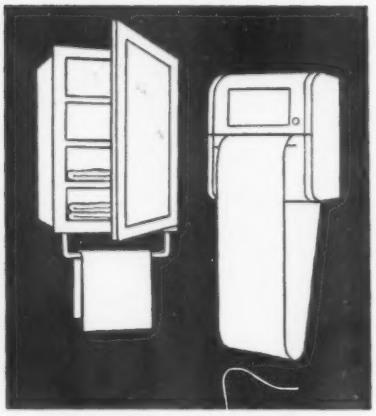
FOGGED OUT?

Go wash your face!



To get rid of that smoky, burned-out feeling—GO WASH YOUR FACE. Snap back to top efficiency with refreshing soap and water and a brisk rub with a soft, absorbent cotton towel. Rub as long and as hard as you please—you can always depend on cotton towels to give you that clean, fresh feeling.

COTTON TOWEL SERVICE

No investment required. Get complete service on a low-cost basis. Under "Towel Supply Service" or "Linen Supply Service" in the telephone book, you'll find your suppliers—call them today!

*WHAT PICKS YOU UP, PICKS UP YOUR EMPLOYEES. When you provide clean cotton towels, workers get added benefits from their rest periods. Watch efficiency, production, and morale climb when "Cotton Fresh-Up" is on the job.*

Linen Supply Association of America
and NATIONAL COTTON COUNCIL
22 W. MONROE ST., CHICAGO, ILL.

## LEAFLETS ON SHOP SAFETY AND MACHINING ALUMINUM

Shop safety and the machining of aluminum are the subjects of two new Small Defense Plants Administration leaflets now available.

The leaflets are numbered 7 in the dual series of Management Aids and Technical Aids issued by SDPA's Management Service Division, and are available free on request from SDPA field offices in Boston, New York, Philadelphia, Richmond, Atlanta, Cleveland, Detroit, Chicago, Minneapolis, Kansas City, Dallas, Denver, San Francisco, Los Angeles, and Seattle.

The safety leaflet, "Reducing Accident Costs by Use of Safety Committees", is the third in a sub-series of six Management Aid leaflets prepared jointly by the Safety Engineering Staff, Bureau of Labor Standards, U. S. Department of Labor, and the SDPA.

It explains the function and organization of shop safety committees and includes a list of suggestions to help make the work of the safety committee effective.

The new Technical Aid leaflet, "Machining Aluminum," gives detailed information about working with this metal in the machine shop. Under separate headings such aluminum machining processes as the following are discussed: drilling and boring, tapping and threading, reaming, punching, riveting, forging, upsetting and embossing, and bending aluminum pipe.

* * *

## SAVE TIME RELINING PIPELINE WITH PLASTIC PIPE

Quick relining of an existing metal pipeline has been reported by Trinity Oil Corp., Ltd., Long Beach, Calif., with an installation of pipe made from Tenite II plastic. Over 600 ft. of 2-in. Krayloy piping were placed inside a combination 3- and 4-in. metal line.

To make the installation, the old line was opened where it emerged from the ground in a roadside ditch, then flushed to remove scale and other material. The new corrosion-resistant plastic line was assembled from semi-flexible 20-ft. pipe lengths, joined with bell and spigot. After plugging the first length with a large cork, crewmen turned water into the old line and started forcing it through the new pipe. The light weight of the plastic pipe line enabled it to float most of the distance.

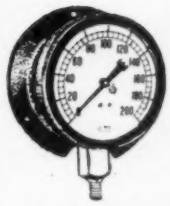
Two men handled the greater part of the operation, aided by two fellow crewmen on the last pipe section. Dresser couplings were used at each end to connect into metal service lines. The entire job took only 2½ hours—a fraction of the time which would have been required to repair or to recover and replace the old line. Since the original pipeline was over capacity the smaller-size plastic line with its negligible head loss during long service is expected to prove satisfactory in this installation.

(*Please turn to page* 320)

Cast iron
Plain case
Plain ring

Cast iron or cast brass
Plain case
Screwed ring

Cast iron
Flanged cast
Plain ring



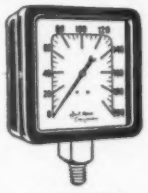
Cast iron or cast brass
Flanged case
Screwed ring

Cast iron or cast brass
Flanged case
Flared ring

Cast iron or cast brass
Flush mounted

Phenol
Flanged case
Screwed ring

Drawn steel
Plain case
Plain ring



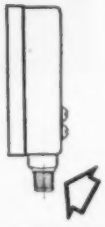
Drawn Steel
Square case
Plain ring

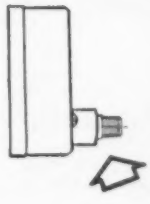
Drawn brass
Plain case
Screwed ring

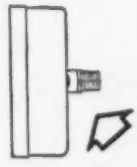
Drawn steel
Flanged case
Plain ring

Drawn steel
Flush mounted

Available with bottom, lower back, and center back connections







# Getting down to cases...

## . . . here are some of the many available in Marsh Gauges

Not content with merely making the finest of pressure gauges, we make them in the widest range of types, pressure ranges, dial sizes, case patterns and case finishes.

As an example of how far we have gone in making gauges ideally suited to every need we show here just a part of the many case patterns available in Marsh instruments. Every type of case, every kind of mounting, every form of connection is represented here . . . and they are available in just about every material and finish.

Because the Marsh line offers highest quality instruments in every conceivable form, they have been accorded top preference by the most exacting users of pressure gauges. Why accept less than the instruments which have become "The Standard of Accuracy?"

***Ask for catalog.*** It covers the scope of Marsh gauges in pressure vacuum, compound, altitude, hydraulic, sprinkler, ammonia, retard, test and diaphragm types. Marsh products also include dial thermometers, heating and refrigeration specialties, and the Electrimatic line of refrigeration regulators and solenoid valves.

**MARSH INSTRUMENT COMPANY**
Sales affiliate of Jas. P. Marsh Corporation
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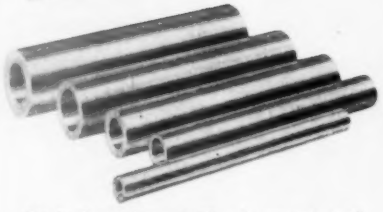
# MARSH GAUGES

THE STANDARD OF ACCURACY

**Promet Bars Stand Up Where the Going Is Tough!**

PROMET
THE Engineered BRONZE

**CORED & SOLID BRONZE BAR STOCK**



Made from Promet No. 6, an outstanding leaded bearing bronze noted for its free machining properties. Unbelievably great resistance to heat and wear. Will not burn, seize, pound out.

PROMET'S HIGH SAFETY FACTOR IS YOUR INSURANCE AGAINST BEARING FAILURE!

Tougher, harder and stronger, it resists shock loads and withstands high compressive forces and will not cut, or stick to the shaft under ordinary operating conditions. There is no seizing, no scoring —just smooth, quiet operation. Will not powder under the most severe conditions of service. When lubrication fails temporarily, Promet carries on safely until proper lubrication can be restored, affording protection against production shutdowns.

PROMET FULLY MACHINED BARS SAVE YOU TIME, TOOLS AND MONEY!

Completely precision machined inside, outside and on the ends, yet sufficient stock remains for the finishing cut. Can be machined at speeds of more than 500 feet per minute—more than double those of phosphor bronzes. This complete machining insures you against subsurface defects sometimes found in rough cast bars. A considerable amount of metal has already been removed—metal which you would be purchasing if you used rough bars. Every bar is absolutely concentric.

Available round, hexagon and square, in 13-inch lengths, rough cast.

MONEY-BACK GUARANTEE

of longer, superior service and lower maintenance cost.

FREE ADVISORY SERVICE

Our competent design and engineering staff will be glad to assist you in solving your special bearing problems.

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**Please send free literature on Promet Cored and Solid Bronze Bar Stock.**

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# Allis-Chalmers Receptionist Guides

These receptionist guides now escort visitors to the person they desire to see at the West Allis, Wis. Works of Allis-Chalmers. They have been given a special training course to familiarize them with departments and personnel so that no time is lost by visitors reaching the people with whom they have business. The company feels that this new program will give a better and more efficient service to visitors and will also permit a better security check on people who come into the plant.

Specially designed uniforms of sharkskin material suitable for summer and winter wear are worn by the girls. Each has two sets. In summer they will be permitted to remove the jackets and wear a blouse. They are also provided with rain cape and parka, and an overcoat to wear when escorting people to various offices throughout the plant.

**Left to right, the guides are Jean McGrath, Sharon Brandonburg, Doreen Ostermick, and Donna Ochs.**

# Steel Reaching Warehouses Readily Absorbed

## Warehouses Unable to Appreciably Increase Inventories During Remainder of 1952

"Steel currently reaching warehouses from producing mills is being readily absorbed by consumers and in most sections of the country the supply is far from adequate to meet demands," according to L. B. Worthington, president, United States Steel Supply Division, United States Steel Company at a luncheon following a press inspection of two typical industrial steel warehouses sponsored by the New York Chapter of the American Steel Warehouse Association. "The shortage of hot-rolled and cold-finished bars in the larger diameters, and of structural shapes and plates is particularly severe," he continued.

"Shipments of steel" from the mills to most consumers have been delayed by adjustments resulting from the work stoppage in the industry and from determination to maintain defense and atomic energy schedules at full speed. Many manufacturing consumers are endeavoring to meet these deficiencies through purchases from warehouse stocks. On the other hand, according to Worthington, the prevailing 30-day inventory limitation is having a depressing effect upon steel markets because fear of unintended violations of this regulation is causing some buyers to withold their orders."

"Stocks in the 14 steel warehouses operated by United States Steel Supply Division from coast to coast have less than half the total tonnage that will be on hand when inventories approach normal," Mr. Worthington reported. He expressed the opinion that warehouses will be unable to increase inventories to any substantial extent during the remainder of 1952. He predicted that gains would be made in the first quarter of next year and expressed the hope that by the end of the second quarter stocks on hand, as well as the variety of individual items available, might reach normal levels.

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## . . . he can save you time and money

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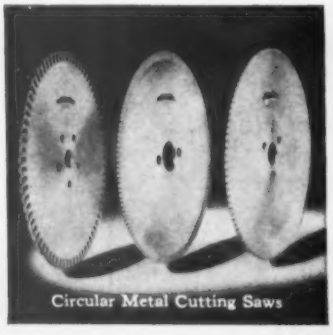
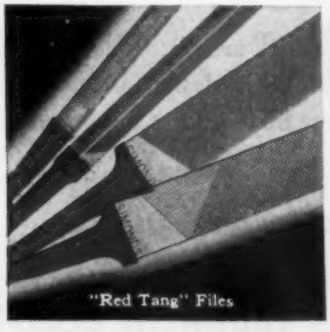
FITCHBURG, MASS.

When you need any of the cutting tools arrayed below, save yourself time and money, and phone your nearest Industrial Supply Distributor. He has the experience, the "know-how", *and the stock,* to give you whatever you need to cut your costs on any cutting job. Look him up in your Classified Telephone Directory . . . and call him up *today.*

*Factory Branches in Boston, Chicago, San Francisco and Portland, Oregon. Canadian Factory in Montreal, Que.*
*Southern Service Shop in Meridian, Miss. (formerly J. H. Miner Saw Mfg. Co.).*
*Simonds Divisions: Simonds Steel Mill, Lockport, N. Y., Simonds Abrasive Co., Phila., Pa. and Arvida, Que., Canada*

"Red End" Hack Saw Blades


Circular Metal Cutting Saws


"Red Tang" Files

Carbide Tipped Saws

Metal Cutting Band Saws

Flat Ground Die Steel

Circular Wood Saws

Machine Knives

**NO!**

Here, conventional U-Bolt clips are properly applied but rope is distorted and subject to life-shortening strains under load.

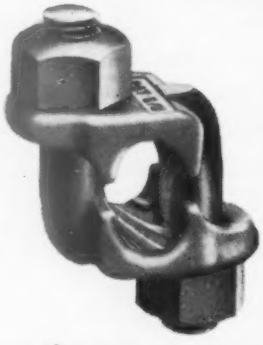
**NO!**

Inexperienced workmen can easily put conventional U-Bolt clips on incorrectly with saddles not on load-line. Result: Weakened rope — risk of accidents.

# It CAN'T Go On Wrong

Both halves of the Laughlin Safety "Fist Grip"* clip are identical. There is no wrong way. The most careless workman can't put 'em on wrong (unless he forgets to tighten the nuts). And they're not only safer and practically foolproof, but they're a darn sight easier to use.

## Here's why:



Nuts are out in the open, can be tightened with any wrench, and don't have to be "inched around."

Bolt ends are shorter and don't get battered or bent. Nuts are always easy to remove when clip is to be re-used.

No crushed rope ends under "Fist-Grips" to cut off. Rope saved.

Fewer clips are required in many installations, so there is less work to do.

*"Fist-Grip"* Clips are just one example of many LAUGHLIN EXCLUSIVES in design, safety and quality that make Laughlin your best buy in wire rope and chain fittings.

*Look for the trademark* *to be sure*

**THE THOMAS LAUGHLIN COMPANY**
**114 FORE ST., PORTLAND, MAINE**

# LAUGHLIN

**THE MOST COMPLETE LINE OF WIRE ROPE AND CHAIN FITTINGS**

*Patented, T.M. Reg.


## MOUNTING STANDARD FOR MACHINE TOOL PUMPS

A new American Standard, Mounting Dimensions of Lubricating and Coolant Pumps for Machine Tools, B5.28-1952, has been approved by the American Standards Association. The new standard contains tables of those dimensions of lubricating and coolant pumps that govern the mounting of such devices on machine tools.

Adoption of the standard dimensions by manufacturers of the pumps will assure interchangeability, insofar as their assembly to the machine tool is concerned. Internal design of the pumps, which is left entirely to each manufacturer, will not be affected by the standardized mounting dimensions.

Three different ways of mounting pumps have been standardized. Foot-mounted pumps are provided with standard bolt openings at specified locations. Bracket-mounted pumps comprise two types. In one case, the bracket is an integral part of the pump unit, having standard mounting dimensions for assembly to the machine tool. In the other type, the bracket is a separate unit provided with standard mounting for assembly to the machine tool and standard mounting for receiving the pump unit. Motor-mounted pumps are driven directly by the motor, which serves as a mounting for assembling the pump to the machine tool.

The standard contains six tables of mounting dimensions for pumps, as follows:

1. Motor-Driven Centrifugal Pumps (Vertical Submerged Type)
2. Mounting Bracket (Side Wall Mounting)
3. Mounting Bracket (Top of Tank Mounting)
4. Centrifugal and Geared Pumps (Motor Foot-Mounting Type)
5. Centrifugal Pumps (Flanged Mounted Type)
6. Gear and Vane Pumps (Foot-Mounted)

Since the standard specifies the mounting dimensions of pumps only, the internal construction of the pumps is left free for improvement with technical progress.

The standard resulted from consideration of pumps being manufactured, study of pump literature, and a canvass of 16 motor manufacturers by Technical Committee No. 26 of ASA Sectional Committee B5 on Standardization of Small Tool and Machine Tool Elements, Chairman of the Technical Committee is A. Wm. Meyer, Director of Research, Brown & Sharpe Mfg. Company, Providence, R. I.

The American Society of Mechanical Engineers, the National Machine Tool Builders' Association, the Society of Automotive Engineers, and the Metal Cutting Tool Institute sponsored the development of this standard under the procedures of the American Standards Association.

Copies of the American Standard, Mounting Dimensions of Lubricating and

(*Please turn to page* 324)

**PERFECTLY MATED!** Only Phillips Drivers are perfectly mated to Phillips Screws. Look for the name Phillips on the shank.

# Q. *How can they increase your sales?*

**AMERICAN SCREW CO. • ATLANTIC SCREW WORKS, INC.**
**THE BLAKE & JOHNSON CO. • CAMCAR SCREW & MFG. CORP.**
**CENTRAL SCREW CO. • CONTINENTAL SCREW CO. • THE EAGLE LOCK CO.**
**ELCO TOOL AND SCREW CORP. • GREAT LAKES SCREW CORP.**
**THE H. M. HARPER CO. • THE LAMSON & SESSIONS CO.**
**NATIONAL LOCK CO. • THE NATIONAL SCREW & MFG. CO.**
**PARKER-KALON CORP. • PHEOLL MFG. CO.**
**ROCKFORD SCREW PRODUCTS CO. • SCOVILL MFG. CO.**
**SHAKEPROOF INC. • SOUTHERN SCREW COMPANY**
**THE SOUTHINGTON HDWE. MFG. CO. • STERLING BOLT CO.**
**STRONGHOLD SCREW PRODUCTS, INC. • WALES-BEECH CORP.**

**A.** ***Through the Phillips Cross-Recessed-Head Screws that they manufacture.*** These famous fasteners are a mark of quality manufacture to your customers. Phillips Screws are nationally advertised in The SATURDAY EVENING POST as the clue to quality: X marks the spot. You'll find them a real sales-plus on your product. What's more, you save time, work, money with Phillips Wood, Machine, Tapping Screws or "Sems." They cut driving time up to 50%, set up tighter, add structural strength. With Phillips Screws you'll find production power driving practical, cut lost time due to accidents. Be sure to cash in on their many benefits.

*X marks the spot... the mark of extra quality*

**PHILLIPS** *Cross-Recessed-Head* **SCREWS**

*As Advertised in* The Saturday Evening **POST**

THE FASTENERS OF TODAY . . . AND OF THE FUTURE

# Standout Identification

*at the right price!*

Long experience, skilled craftsmanship, plus the latest and best equipment enable us to produce high quality metal plates for no more than you may pay for inferior identification. A sparkling metal plate spotlights your product, reflects quality and lends distinction. You're assured of lasting identification, clearness, and permanent readability with plates produced by Chicago Thrift-Etching Corporation.

**GET OUR QUOTATION**

Send a rough sketch, blueprint or sample, with specifications, for quotation —or write us fully about your requirements in name plates, instruction plates, dials, panels, scales, etc. Here standout identification and enduringly fine appearance costs no more!

**ALUMINUM ANODIZING**

We are equipped to apply this protective coating to aluminum parts and products by the exclusive Alumilite process—in a wide range of attractive colors. Your request for quotation is solicited.

## CHICAGO THRIFT-ETCHING CORPORATION

**1555 North Sheffield Ave., Chicago 22, Illinois, Dept. C**

Metal Name Plates, Dials and Panels, Etched or Lithographed • Etched Metal Scales, Clock Dials, Trophy Plates, Plaques, Advertising Specialties • Etched Metal Panels for elevator and architectural uses • Coin Banks • Lithographed or Screened Plastic Name Plates or Dials • Aluminum Anodizing by the Alumilite Process.

**SUBSIDIARY OF DODGE MANUFACTURING CORPORATION, MISHAWAKA, INDIANA**


(*Continued from page* 322)

Coolant Pumps for Machine Tools, B5. 28-1952, are available from the American Standards Association, 70 East 45 Street, New York 17, N. Y. or from the American Society of Mechanical Engineers, 29 West 39 Street, New York, N. Y.

◆ ◆ ◆

## NEW LOW TEMPERATURE BONDING AGENT JOINS DISSIMILAR METALS AS WELL AS NON-METALLICS

A unique new bonding agent, especially formulated for joining metals to each other, to similar or dissimilar metals, or to non-metallic materials such as ceramic, glass, or wood, is also characterized as a new method of production-joining of titanium, magnesium, aluminum, and similar difficult to bond metals.

**Resistance heater here brings metal temperature up to about 400° F., at which point rod is applied to joint area**

The new bonding agent, known as ChemoTec, was recently announced by the ChemoTec Division of the Eutectic Welding Alloys Corporation, Flushing, N. Y. It is made in rod, powder, paste and liquid forms. In the rod form it is applied with a welding-rod technique, but at a much lower heat, and tensile strengths in excess of 5,000 psi have been obtained.

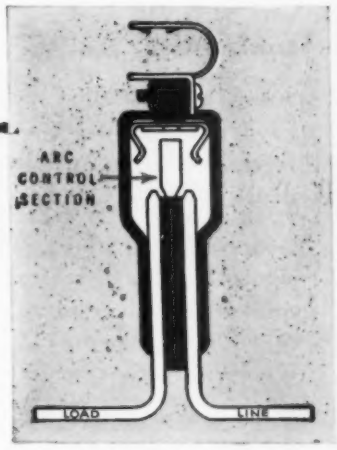
It bonds by capillary and chemical action, has high fluidity, and the extraordinary wetting characteristics enable the thin flowing material to penetrate all but sealed joints. The application of heat sets up a chemical reaction which changes the molecular structure and fuses the bonding material. The process gives a bond at the interface equal to the tensile strength of the bonding material itself.

As is the case with thin flowing brazing alloys, maximum strength is obtained from close fitting joints, and a joint clearance of from .004 to .008-in. should be maintained. The part to be joined is broadly heated to approximately 250 to 300 deg. F. The rod acts as a temperature indicator, and sufficient material is applied to effect the joint. It is stated

(*Please turn to page* 326)

# Want genuine Type A safety switches at C prices?

BullDog Vacu-Break Master Safety Switch

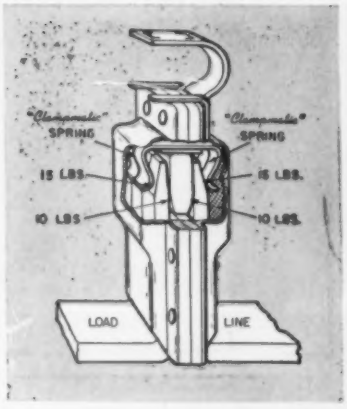



**← SAFE ARC CONTROL**

Dangerous arcs are quickly snuffed out by lack of oxygen in BullDog's Vacu-Break chamber. This eliminates excessive arcing which, in ordinary switches, causes burning, pitting and rapid deterioration of contacts. Thus, the Vacu-Break chamber materially reduces switch maintenance. Time-tested. Famous throughout industry for matchless safety, fool-proof performance.

**BOLT-TIGHT CONTACT →**

"Clampmatic" obtains extra contact pressure between switch jaws and contact slugs. In ordinary switches, jaws exert about 10 lbs. pressure on blade. In Vacu-Break, the Clampmatic spring augments this with 15 lbs. pressure on both "line" and "load" sides of contact. Prompt switch action is assured since energy stored in the spring while in "ON" position accelerates movement to "OFF" position.




## Ask for BullDog's Vacu-Break Master Line . . . *fully guaranteed* Type A safety switches that fill all A, C, D requirements! Listed by Underwriters', meet Federal Specifications W-S-865.

**Pricewise** or qualitywise, you can't go wrong when you ask for BullDog Vacu-Break Safety Switches.

For here are authentic Type A switches that sell at Type C prices. Positively guaranteed by BullDog to meet any A, C, or D application need!

### COST LESS TO BUILD

BullDog can make this great offer — a Type A safety switch at a Type C price — because the switches have been redesigned, standardized and simplified without sacrificing quality.

Where other manufacturers must build hundreds of switches to handle A, C, and D requirements, BullDog concentrates production on just 37 non-duplicating items. Therefore, they cost less to build, and BullDog shares the savings with you!

### NEW CONVENIENCES

Because just 37 Type A switches handle all your needs, they give you great new convenience, too. They replace hundreds of catalog numbers, simplify safety switch ordering, stocking and installation.

Check these BullDog Vacu-Break Safety Switches now at your local BullDog distributor's. You'll discover built-in safety and quality that few switches can match at *any* price!

Listed by Underwriters' and listed by NEMA as Type A switches. Meet Federal Specifications W-S-865 and all Code requirements.

**BULLDOG**

**BULLDOG ELECTRIC PRODUCTS COMPANY**
DETROIT 32, MICHIGAN • FIELD OFFICES IN ALL PRINCIPAL CITIES
IN CANADA: BULLDOG ELECTRIC PRODUCTS OF CANADA, LTD., TORONTO
PIONEERS IN FLEXIBLE ELECTRICAL DISTRIBUTION SYSTEMS

SERVING INDUSTRY FOR 50 YEARS WITH FINER ELECTRICAL PRODUCTS

## MALLEABLE IRON CASTINGS that you can depend upon!

The right connection—for the malleable iron parts you need—can be a source of satisfaction to you.

Many, many leading makers of durable goods use Moline Iron Works Malleable Iron Castings to uphold the quality of their products.

Good service, quality control and reasonable prices are three reasons why your connection with Moline Iron Works can be both a pleasant and profitable one. We invite your specifications for quotation.

The parts shown here are representative of our production for automotive, farm implement, appliance and railroad customers.

**MOLINE IRON WORKS**
Moline, Illinois, U. S. A.

MOLINE IRON WORKS Since 1870 MOLINE, ILLINOIS U.S.A.
SEVENTY YEARS OF SERVICE

**LISTEN CURLEY . . . THAT'S ONE EXTINGUISHER YA' DON'T HAVE TO WORRY ABOUT GETTING WET!**

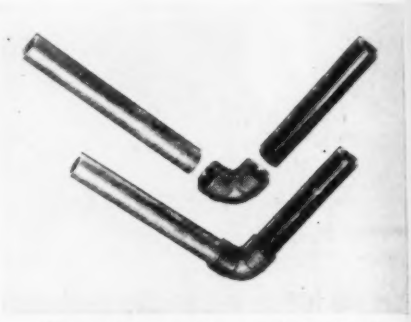
That's right! Ansul Dry Chemical Fire Extinguishers are Water-tight. Thousands of Ansul Extinguishers stand guard over difficult fire hazards in locations where the extinguisher cannot be protected from the weather.

For installations where extinguishers cannot be pampered with expensive shelters, water-tight construction is essential for dependable fire protection. That's one reason you see so many more Ansul Dry Chemical Fire Extinguishers in outdoor locations protecting all sorts of tough hazards associated with the petroleum industry.

SEE PAGE 260


(*Continued from page* 324)

that high wettability and thin flowing characteristics enable a high strength bond to be made irrespective of the metallurgical structure of the materials bonded.



**Elbow joints may be bonded with the new bonding agent in paste form. The material is also available in powder and liquid forms**

Joining can be done in an oven, in a furnace, by torch, by propane, by induction and all practical heating methods. If heat is undesirable or impractical, joining can be done at room temperature.

1 1 1

## NO IMMEDIATE DECONTROL OF COPPER PRICES

There is no prospect, at this time, of continuing sufficient raw materials of copper to provide for an expanded civilian demand added to anticipated military demands and the resumption of stockpiling, officials of the National Production Authority, Department of Commerce, told a meeting of the Primary Copper Producers Industry Advisory Committee.

Members of the Committee called for complete decontrol of the price of copper and copper products and asked the help of NPA in reaching this goal.

The committee denounced what they called an "ordeal by planning" and expressed an opinion that the present program should be scrapped.

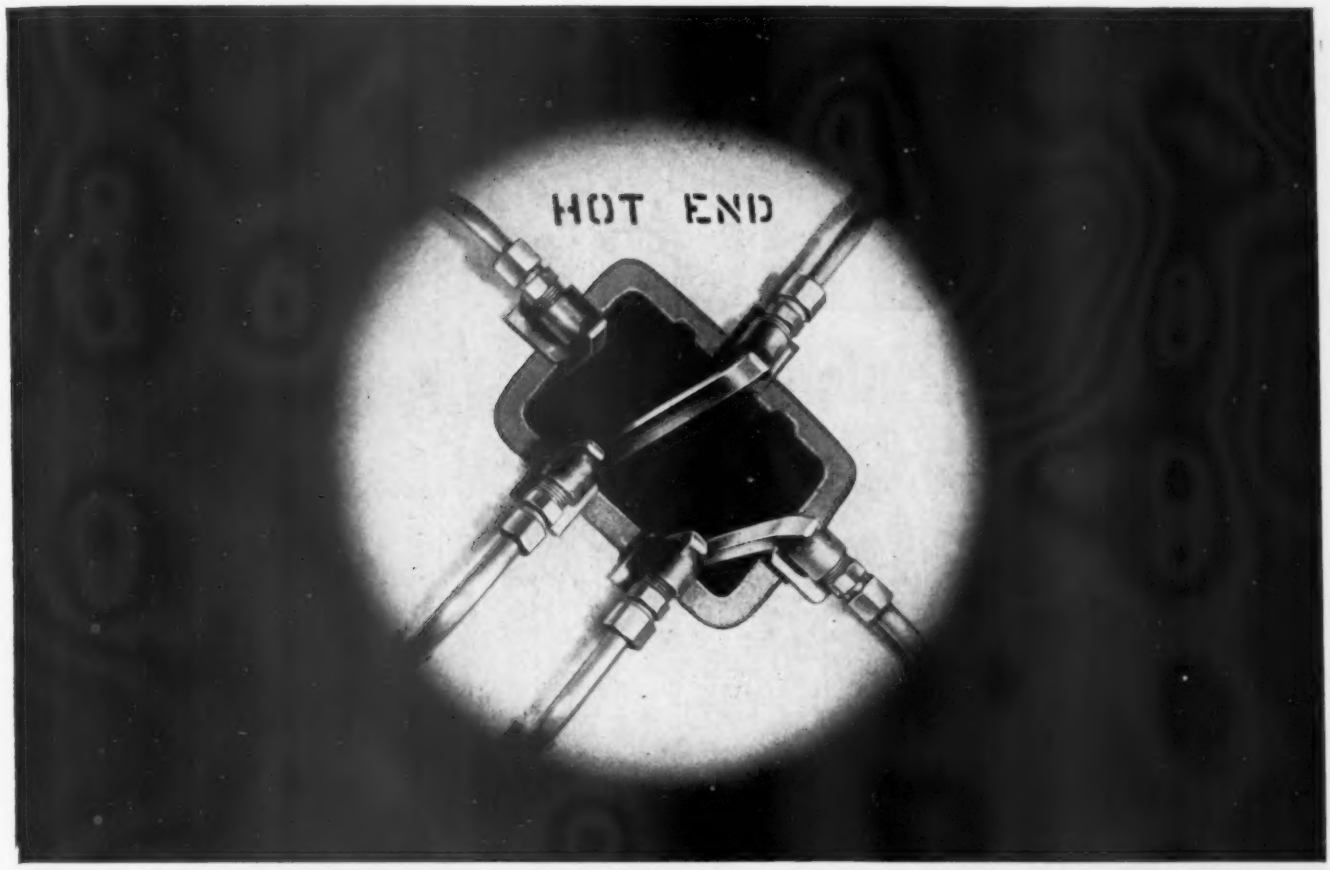
"We are now in the stage where, if controls don't work, the thinking is that the new controls should be added," committee members said. "Copper prices should be decontrolled and it is absolutely necessary to get rid of the 24½ cents per pound price in order to reach the production goals in refined copper," it was stated.

The committee recommended that purchasers for the stockpile be deferred until the price situation has been resolved.

NPA officials told the committee that domestic allocations issued to consumers of primary copper would be made good, and that the Copper Division would "see to it" that imports from foreign countries would be distributed to the domestic producers on "an equitable basis."

OPS officials who were present said that there would be no immediate decontrol of copper prices, but offered to set up a meeting of OPS officials with

(*Please turn to page* 328)




# The Superior Tube That Keeps Its Temper In A Hot Spot

Producing tubing and tubular parts that stand up well even when the heat's on is a Superior specialty.

One of these parts is shown above. It is a guide rail for a TOCCO† induction hardening furnace, manufactured by The Ohio Crankshaft Co., a Superior customer.

This simple tube has to be tough. Constantly exposed to high heat, it must retain its temper, stay hard. Continually abraded by the scrubbing action of the 25 pound hot-rolled steel slugs that ride along it, it must require infrequent replacement. In addition it must not crack when brazed, or develop cracks in use.

Reading this list of requirements would suggest that the guide rail must necessarily be a brute-strong, thick-walled, heavy-weight. It isn't—it is a ⅛" square Inconel* tube with a wall only .065" thick. It is another example of fine, small tubing that does a big job well.

Producing it presented a problem—but just the type of problem we like to meet and can almost always solve. We have the right combination of engineering, research and production facilities that makes it easy for us to work closely with our customers' designers and engineers, and to produce the tubing required to fit the most exacting specifications.

If you use small tubing and have a problem it might be well to check with us. We can probably help and will be glad to do so. Write Superior Tube Company, 2034 Germantown Ave., Norristown, Pennsylvania.

**BE SURE ABOUT TUBING—SPECIFY** *Superior*

THE BIG NAME IN SMALL TUBING

All analyses .010" to ⅜" O.D.
Certain analyses (.035" max. wall) up to 1⅜" O.D.

West Coast: Pacific Tube Company, 5710 Smithway St. Los Angeles 22, Calif. UNderhill 0-1331

**ROUND AND SHAPED TUBING**

Available in:

**Carbon Steels:**
A.I.S.I.—C-1008, MT-1010, MT-1015, C-1118, MT-1020, C-1025, C-1035, E-1095

**Alloy Steels:**
A.I.S.I.—4130, 4132, 4140, 4150, 8630, E-52100

**Stainless Steels:**
A.I.S.I.—303, 304, 305, 309, 310, 316, 317 321, 347, 403, 410, 420, 430, 446, T-5

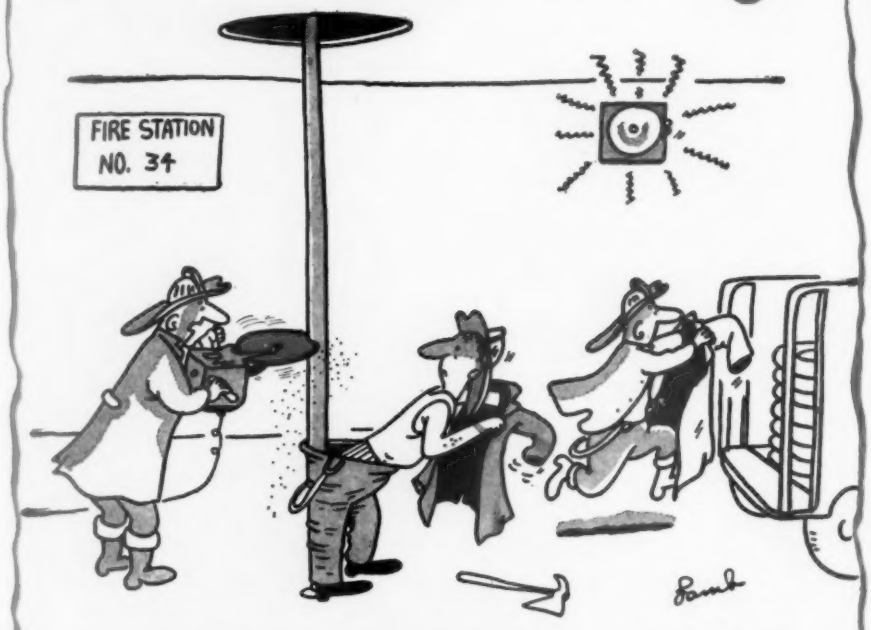
**Nickel Alloys:**
Nickel, "D Nickel"*, "L Nickel"*, "Monel"*, "K Monel"*, "Inconel"*, 30% Cupro Nickel.

**Beryllium Copper**

*Reg. U.S. Trademark—International Nickel Co.
†Reg. U.S. Trademark—The Ohio Crankshaft Co.

the *tougher* the cutting job . . .
the *better* the opportunity for . . .

# Abrasive Cutting




"FOR HEAVEN'S SAKE, SAWYER . . . HOW DID YOU GET INTO THIS FIX?"

Whether you have a specialized cutting job or a mass production problem, you can depend on Allison Wheels. Whatever the material or the condition, there is an Allison Abrasive Cutting Wheel processed and formulated to fit the job. This means faster cutting—fewer rejects—reduced operating costs.

Do you realize, Mr. P.A., that these Allison cost and time-saving advantages are available to you . . . together with Allison Specialized Service . . . *at a competitive price?* We invite you to investigate. Call us.

Allison ABRASIVE CUTTING WHEELS

THE *best* WAY TO CUT MANY MATERIALS

THE *only* WAY TO CUT SOME

SEND FOR THIS HELPFUL BOOK ON ABRASIVE CUTTING

THE ALLISON COMPANY
253 Island Brook Ave., Bridgeport 8, Conn.

Please send me your free booklet on Abrasive Cutting:

NAME:.....

(7AL52)

ADDRESS:.....

(*Continued from page 326*)

their industry advisory committee, many of whom are also on the NPA committee, to discuss the price problem.

NPA estimates of the amount of primary and secondary copper were described by committee members and agreed to by NPA officials as being probably optimistic in total and "rashly optimistic" as far as custom smelter production is concerned. Copper Division officials stated that these estimates were being revised and the next estimates will be "more realistic."

## INDUSTRIAL FASTENERS INSTITUTE RELEASES NEW LOCKNUT BROCHURE

Designed to serve as a means of assisting in the most effective use of locknuts, a new 24-page brochure entitled "Locknuts" has been published by the Locknut Section of Industrial Fasteners Institute, 3648 Euclid Ave., Cleveland, Ohio. The booklet includes an illustration, a description and a short explanation of the principle of operation of 36 representative types of locknuts.

Although many designs have been offered, no one locknut has been found that will satisfactorily perform all functions for which these items are purchased and used. This new brochure is intended to be a guide to assist users in selecting from the various types available, the locknut best suited for each application.

The information given for each of the 36 locknuts includes a description of the nut, its principle of operation, the names of firms manufacturing it and photographs and drawings of the product.

## REFORESTATION SETS NEW TREE PLANTING RECORD IN SOUTH

An all-time peak in Southern reforestation is expected this fall and winter, with the tree-planting goal set at 303 million seedlings.

According to a report released today by Southern Pine Association, 184 million trees were planted during the past season. The estimated current production would top all previous records.

Covering a 12-state area, the SPA survey shows that the lumber industry purchased a fifth of the output of state nurseries. In addition, more than a quarter of a million seedlings were grown in company-operated nurseries.

H. C. Berckes, executive vice-president of the Association, emphasized that the survey results indicate how "these vast new acres of forests are preparing us for tomorrow's timber needs.

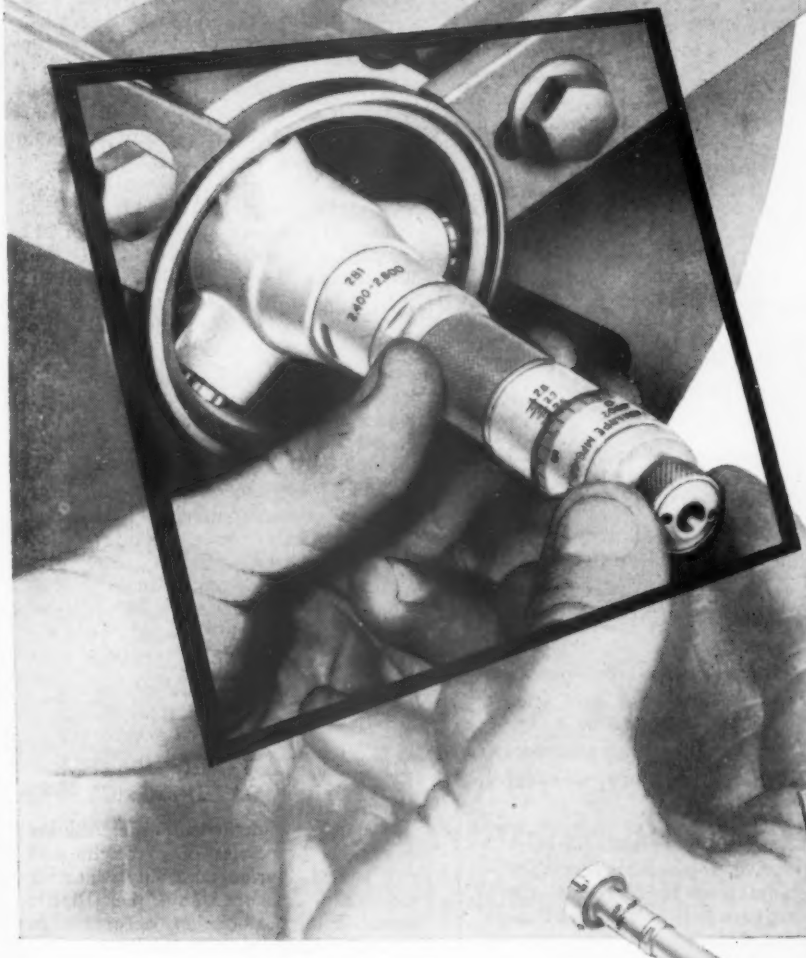
"Southern forests have provided a third of the nation's timber during the past quarter of a century," Mr. Berckes pointed out. "The widespread reforestation reflected in this survey, plus scientific management and forest protection, are assuring the South's continued position as a major lumber producing region."

The forest-planting survey revealed that trees were planted on more than 40 thousand acres of company lands. In addition, the lumber industry provided a million seedlings to farmers for planting.

# NEW INTRIMIK

## Internal Tri-point Micrometer

Measures ***any*** Size Bore or Hole
within range of tool...
***without masters***



Now you can realize new economies and speed by measuring bores and holes *directly!* The new Brown & Sharpe Intrimik Internal Tri-point Micrometer gives you a handy means of measuring in increments of .0001" on bore sizes from .275" to .500", and in increments of .0002" on bore sizes from .500" to 4.000". It's a big time and money saver... eliminates the need for expensive plugs and setting rings. Every feature for convenience, precision, and long service life is incorporated in its design and construction. Write for new illustrated Bulletin. Brown & Sharpe Mfg. Co., Providence 1, R. I., U.S.A.

Extensions are available for all size Intrimiks to facilitate measuring deep holes.

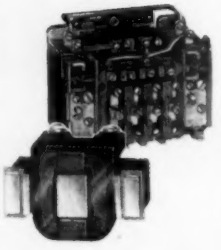
Furnished as individual tools and in sets

***WE URGE BUYING THROUGH THE DISTRIBUTOR***

**Brown & Sharpe** B·S

# THERE IS AN R-B-M CONTROL To Fit Your Needs

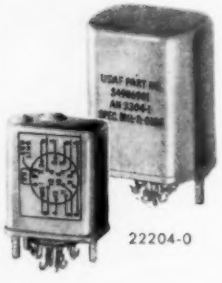
**AC MAGNETIC STARTERS**
with Plasti-Clad Magnet Coil
•
*Write for Bulletin 605*



***Full accessibility in a small package.***

Contacts, coil and thermal element replacement with use of screwdriver only. Magnet coil—in molded phenolic case with riveted terminals—is completely embedded in a rock-hard resinous material, thus protecting against oil, dirt, moisture and normal mechanical damage.

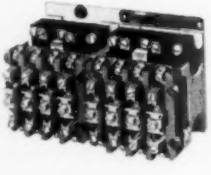
**HERMETICALLY SEALED RELAYS**
•
*Write for Bulletin ASR*
•




***50% smaller — lighter.***

R-B-M 22204-0 meets AN 3304-1 specifications. R-B-M engineers have developed the 22300-0 currently used in government electronic, airborne and ground equipment—as the electrical and mechanical equivalent of the AN 3304-1, yet 50% smaller in size with ½ the weight.

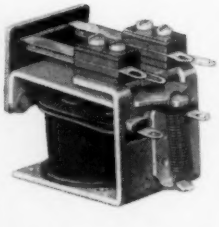
**INDUSTRIAL CONTACTORS**
with Plasti-Clad Magnet Coil
•
*Write for Bulletin 600*
•



***2-8 poles Non-Reversing.***
***2-5 poles Reversing.***
***25 Amp — 600 AC Max.***

Contacts can be replaced without removing wiring. To change coil, remove magnet frame and coil assembly only. 10 and 15 amp. poles can be changed from normally open to normally closed by using screwdriver only.

**GENERAL PURPOSE RELAYS**
•
*Write for Bulletin 570*
•



***Low cost. Small size. Dependable performance. Available in many contact arrangements.***

Whatever your needs for inexpensive, dependable relays for commercial applications—investigate R-B-M General Purpose Relays.

Other R-B-M products include: motor overload protectors, motor starting relays and low voltage DC electrical devices.

*Consult R-B-M On Your Control Problems — Write Department J-11*

RBM
**R-B-M DIVISION ESSEX WIRE CORP.**
*Logansport, Indiana*
MANUAL AND MAGNETIC ELECTRIC CONTROLS
— FOR AUTOMOTIVE, INDUSTRIAL, COMMUNICATION AND ELECTRONIC USE


## MACHINE TOOL INDUSTRY PRODUCING AT RATE OF $100,000,000 PER MONTH

Shipments of machine tools for the defense program continue to mount, states the National Machine Tool Builders Association of Cleveland. The industry is now producing at the rate of $100,000,000 per month by contract to an average of $20,700,000 per month in the pre-Korea year 1949. Some companies are now shipping at the highest rate in their history. Total shipments for 1952 are expected to reach or exceed $1,000,000,000.

As output rises, backlog, in terms of months of production, continues to decline, states the association. The backlog is now estimated at 12 months' production at the current rate, by comparison to the peak of 23½ months' production in September 1951. It is still, however, equivalent to several years' normal peacetime production.

While it is understood that a large volume of machine tools still remains to be ordered for the defense program, just what these orders will be, or how soon they may materialize, are questions to which as yet there has been no answer. Meanwhile the picture continues to be confused by cancellation.

Cancellation of orders of machine tools for National Defense are still heavy, in proportion to new orders. For the first eight months of this year cancellations have been equivalent to 28% of new orders. The situation reflects the "step forward, step-back" procedure which apparently has now become the pattern of the National Defense Program. * * * It would appear there is continuing indecision and debate as to defense production objectives and sequence of urgency.

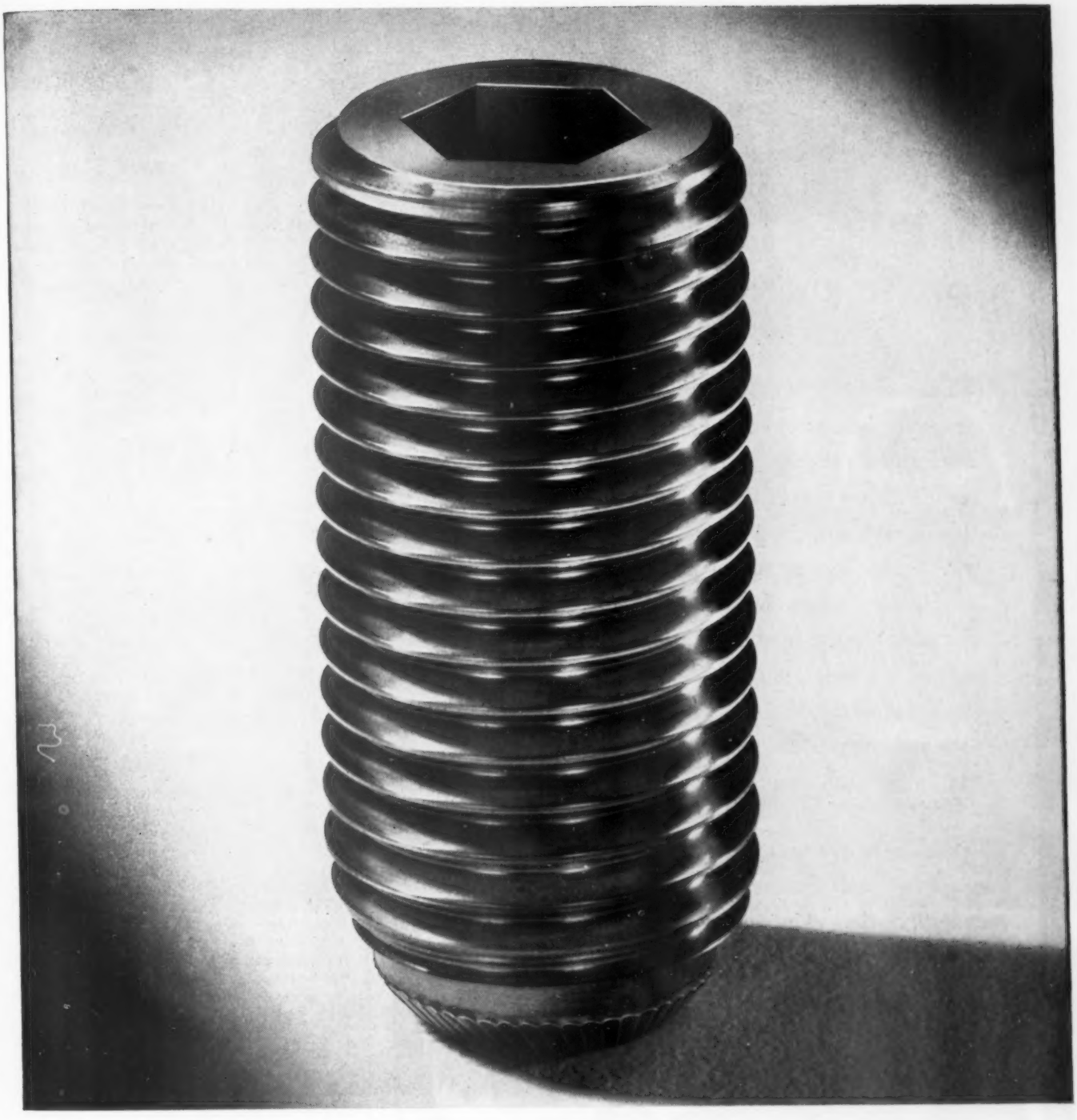
Backlog of orders, although large, is by no means uniformly distributed. Some companies have defense orders equivalent to as high as two years' production whereas others, making types of machines less in demand for defense work, find themselves faced with the possibility of having to reduce their working forces unless more orders are in sight.

## DEVELOP TEST METHODS FOR PLASTIC COATED FABRICS

Standard test methods for determining the various properties of pyroxylin and vinyl coated fabrics and vinyl sheeting have been developed by the Plastic Coating Film Association, according to S. Ernest Kulp of the Masland Duraleather Co., president of the association.

The tests are designed to assist purchasers of these plastic materials in determining whether merchandise has the qualities for their particular requirements or meets specifications they have set up. The association's technical committee worked out the test methods and the procedures and equipment necessary were kept as simple and inexpensive as possible, within a practical range of accuracy.

(*Please turn to page* 332)



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UNBRAKO Self-Locking Socket Set Screws won't work loose. Non-slip internal wrenching provides positive drive. Self-locking feature prevents creep and subsequent loosening. Machinery stoppage and production losses are materially reduced. Write for descriptive literature. STANDARD PRESSED STEEL Co., Jenkintown 31, Pennsylvania.

*Standard* UNBRAKO *Self-Locking Set Screws, #4 to 1" inclusive, are available from your* UNBRAKO *distributor's stocks. Ask him for your supply of these and other* UNBRAKO *threaded industrial fasteners.*

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***WL steels are metallurgically constant. This guarantees uniformity of chemistry, grain size, hardenability – thus eliminating costly changes in heat treating specifications.***

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(*Continued from page* 330)

For pyroxylin and vinyl coated fabrics the committee developed tests for: tensile strength, tearing strength, adhesion of coating, weight of coating and fabric, cold crack, blocking, stability to heat and light, adhesion resistance, permeability to water, fastness to rubbing, flame resistance and volatility.

The tests for vinyl sheeting cover: tensile strength, elongation, tearing strength, volatility, stability to heat and light, low temperature impact resistance, fastness to rubbing, blocking, flame resistance, resistance to lacquer or varnish lifting and determination of thickness.

The tests have been formally approved by all members of the association who represent a substantial majority of the nation's production of pyroxylin and vinyl coated fabrics and vinyl sheeting. A booklet describing the tests will be issued shortly. C. A. Alt of E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., is chairman of the technical committee.

✦ ✦ ✦

### NEW MANUAL ON BRASS PARTS MADE BY POWDER METALLURGY

Basic design principles and new information on mechanical properties are combined with an analysis of cost and production factors in new manual, 32 pages, on "Facts About Pressed Brass and other Nonferrous Powder Parts." The new handbook, announced by the New Jersey Zinc Company, 160 Front Street, New York, is intended to be a concise reference to the factors which should be considered in designing and selecting small structural parts for fabrication by the powder metallurgy method.

The manual points out that no part is a "natural" for powder metallurgy just because it is of intricate shape and now being made by some other method involving expensive machining and shaping operations. Some of the more striking examples of cost savings are achieved with parts that are simple in shape and in profile.

The booklet has two main divisions, the first of which covers such topics as Maximum and Minimum Sizes, Practical Shapes, Physical and Mechanical Properties, Precision and Tolerances, Plating and Other Finishes, Self Lubrication, Production Speeds, Raw Material and Tool Costs.

The second section is given over to informative analyses of 24 case histories of commercial parts illustrating various aspects of the topics of the first section.

The case histories section of the booklet is particularly revealing in disclosing some broad areas in which powder metallurgy is competing to advantage with older methods of fabrication. For the purpose of illustrating these relationships effectively, the applications are presented in five groups: (1) original powder metallurgy designs, (2) conversions from sand castings, (3) conversions from screw machinings, (4) conversions from stampings and (5) other conversions.

LOADING THE MOLD-MAKING MACHINE WITH RESIN-SAND MIXTURE
HOT PATTERN PLATE CLAMPED TO MOLD-MAKING MACHINE
INVERTING MACHINE TO DEPOSIT RESIN-SAND MIXTURE ON HOT PATTERN
REMOVING PATTERN PLATE WITH ADHERED SAND-RESIN CRUST
OVEN CURING FRESHLY FORMED MOLD HALF
EJECTION PINS REMOVING CURED MOLD HALF FROM PATTERN PLATE

# HOW SHELL MOLDING CAN CUT YOUR COSTS!

The shell molding process is currently cutting costs of finished castings, both ferrous and non-ferrous. Pictured here is the "heart" of the process, a thin-shell sand mold, backed with steel shot for reinforcement and heat dissipation as molten metal is poured.

Made of fine-grained sands bonded with BAKELITE Phenolic Resins, such molds yield castings with extremely fine detail, almost pattern-smooth surfaces, and tolerances as close as .003 to .005 inches per inch.

How can this process help you? By producing castings to closer dimensions and with smoother surfaces, it reduces costly machining and finishing operations. Properly applied to your needs, it can speed output, lower manufacturing costs, and break production bottlenecks.

Your foundrymen can tell you how you can benefit from shell molding. Consult with them before your plans reach the blueprint stage. Or, write Dept. EI-25 for further information on the BAKELITE Phenolic Resins developed expressly for the process.

**BAKELITE**
TRADE-MARK
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**BONDING RESINS**

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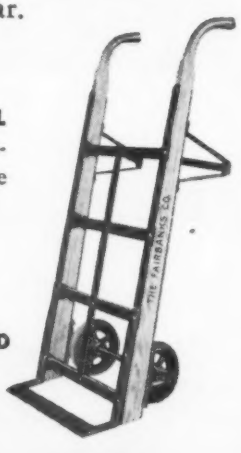
Series 21 **LOCK-WELD SWIVEL CASTERS** eliminate the greatest cause of caster failure: the king pin.

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## OBSOLETING THE COCCIDAE—NEW VEE RING BONDS MORE PERMANENT

If a commutator fails in service it may well be because of what some insects in India had for breakfast two years ago. Shellac has been the conventional way of bonding the mica for commutator vee rings since way back when. And shellac is the excretion of insects of the Coccidae family that feed on Asiatic acacia trees. The product is variable, according to kind of insect, the weather, amount of rain, even the altitude, and other factors beyond man's control. In spite of best processing control, an element of variability in shellac-bonded insulation remains. Further, increasing duty of commutators, such as in transportation service, has made a better bond desirable.

Resin Bonded V Rings

Thus, some time ago, a search for such a man-made material to replace shellac became a problem for the research engineers. They have provided a highly successful answer. The new synthetic bond, which is still known only by a materials number, is of the vinyl type. Seldom does a synthetic resin contain more than two basic ingredients. A few have three. This one, to make matters complicated for the research chemists, has four. Because of the almost infinite combinations of proportions possible with four variables and because prediction by calculation is virtually impossible, more than 200 combinations were formulated and tested before the happy choice appeared.

Vee rings bonded with the new resin are made in the same way and with the same equipment as before. However, the product is both more permanent and more uniform. The tendency for mica flakes to slip over each other under the operating conditions of high pressure and high temperature is greatly lessened. The result is a commutator dimensionally more stable. It retains the required surface smoothness for good brush tracking and commutation under all conditions of speed and temperature.

**SEE PURCHASING CLASSIFIED SECTION PAGE 372**

# School Daze!

Just because that bathing suit is proper at the beach, she shouldn't assume it's proper for the classroom, too!

And just because one bearing is best lubricated by one particular grade of oil, you shouldn't assume that the same oil is best for *all* bearings on that machine. In many cases it isn't.

**OIL CUPS permit you to lubricate each bearing with the oil best suited to that bearing—thus prolonging bearing life, reducing maintenance costs, cutting down-time, boosting production. And oil cups fortunately *cost very little.***

Gits oil cups have been the standard for industry for more than 40 years. Gits Bros. has the largest selection of oil cups available anywhere. Call on Gits Bros. for a prompt, efficient solution to your lubrication problems.

***Write for free Catalog No. 60-A***

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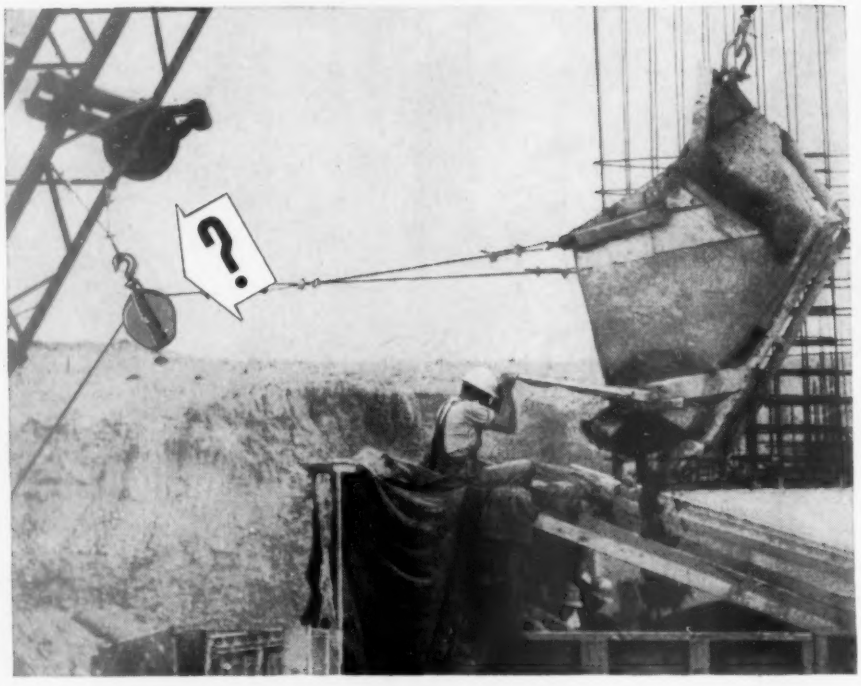
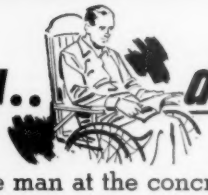
# What's the capacity of this block?




## If you don't know..  don't use it!

Put yourself in the place of the man at the concrete bucket. If that block behind him should fail . . . what chance would he have? Somewhere, today, a man who works for you may entrust life and limb to a wire rope block in the same way. If it's an American CROSBY block, you can breathe easy . . . because it's LOAD-RATED. *Safe working capacity is clearly embossed on the side plate;* and every man using it can know when he's working safely. In addition, American CROSBY wire rope blocks have extra reserves of strength and toughness in every part. And they're individually packaged, for easy stocking, handling and identification. Sold by distributors and mill supply houses everywhere. Made by AMERICAN HOIST & DERRICK CO., ST. PAUL 1, MINN.

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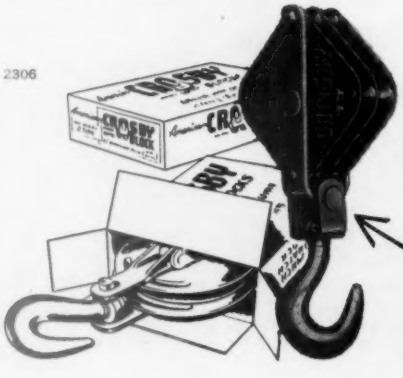
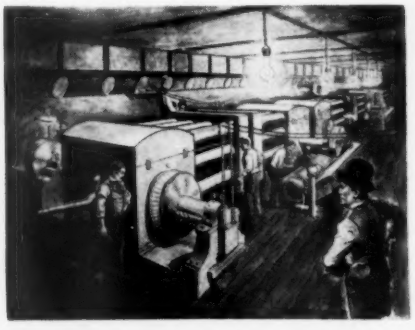


American CROSBY Load-Rated! WIRE ROPE BLOCKS


### DRAMATIC FILM ON ROLE ELECTRICITY PLAYS IN NATIONAL WELFARE

A dramatic new sound-color motion picture "Freedom and Power", designed to give the public a better understanding of the integral role electricity plays in national welfare and security, produced for the General Electric Company in Hollywood by the Raphael G. Wolff Studios was recently premiered at the Waldorf-Astoria Hotel in New York.



**When Edison's central power station in New York, first in the nation, was turned on in September 1882, 59 customers received electricity for their lamps.**

The new 16-mm, sound, Kodachrome production, which is 29 minutes in length is the latest presentation in General Electric's series of visual programs dedicated to the improvement of the American Way of life through the use of electricity. It was written to appeal to all types of audience, and will be made available to industrial firms, schools, service groups, clubs, trade and business associations, etc.

**Modern steam-turbine generator shown in scene from the new motion picture. Today the electrical industry in the U. S. supplies power to 47,000,000 consumers.**

The film explains how electricity has in the span of a life-time, done more to change the lives of all mankind than any other physical force, and how the United States with only six percent of the world's population, can produce over forty percent of the world's goods, pointing out that in 1950 every American worker had on the job an "invisible battalion" of more than 150 unseen helpers in the form of electric horsepower.

Woven into the thread of the film story is the dominant theme of pioneering and the achievements of free men. The story ranges all the way from Ben Franklin and his kite to the spectacular contributions of Edison that laid the foundations of our modern electrical age.

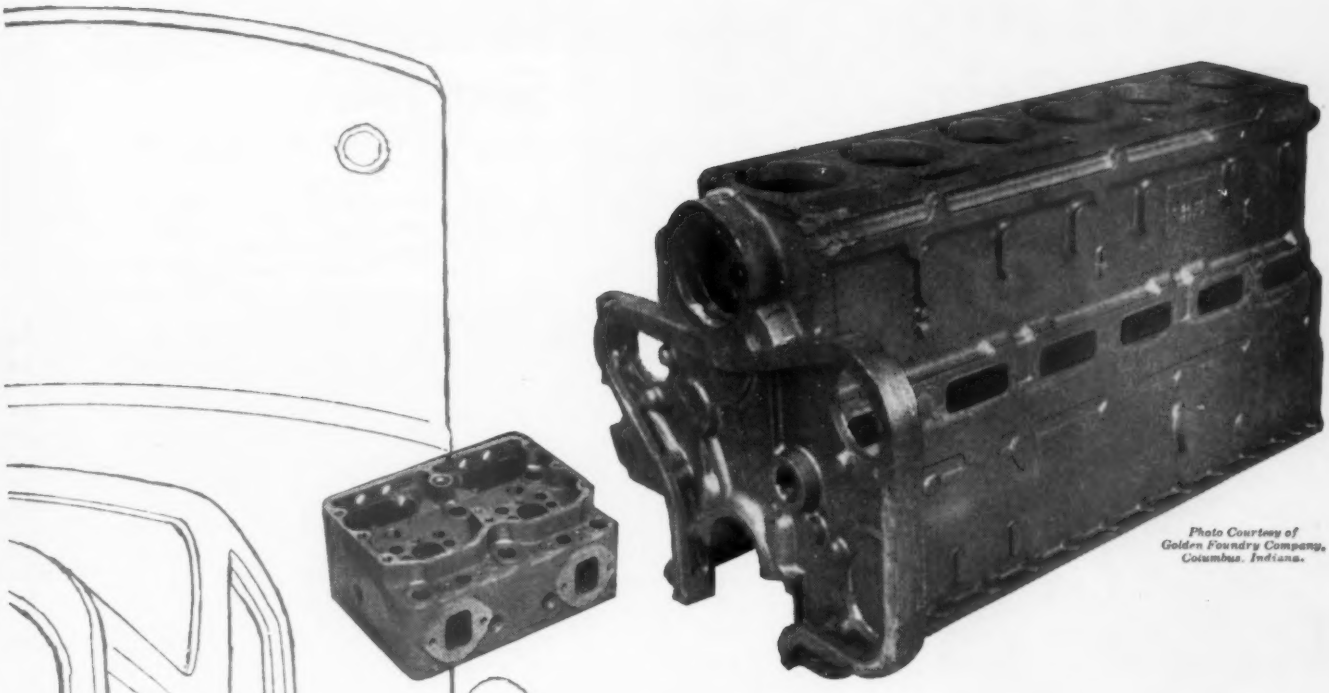


Photo Courtesy of Golden Foundry Company, Columbus, Indiana.

# Cummins builds them rugged...

## with mighty rigid "Specs"

For rugged dependability, many of the nation's leading truck lines will agree, you can't beat a Cummins Diesel engine. A good reason for that reputation can be found in the rigid requirements for all component engine parts—including the block and cylinder head castings shown above.

To meet these strict requirements, the foundry which furnishes the castings has long made it a point to use only the finest pig iron—including Republic CHATEAUGAY. And the result: *Uniform high strength and machinability throughout every casting,* despite intricate passages and adjoining light and heavy sections.

A Republic Pig Iron Metallurgist will be glad to give you the complete facts about CHATEAUGAY Pig Iron. Write, wire or phone:

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# Burlap Reaches Lowest Price Levels Since 1947

### Second Hand Bags Bring Third to Half of Original Value

New interest is developing in burlap bags among manufacturers, packers, shippers and farm users as a result of September burlap prices hitting six year lows, presence of ample supplies of jute, the raw material, in India and Pakistan, and build up of current United States stocks to close to 200 million yards, according to William A. Nugent, vice-president of the recently formed Burlap Council.

Burlap, traditional, heavy-duty packing and bag material—the United States has used up to 55 per cent of the world's burlap output annually—has since January dropped to lowest price levels since 1947. New York quotations in the key 10-ounce weight were down to 14.0 cents a yard this week, a drop of 13.5 cents from 27.5 cents a yard in January of this year.

Mr. Nugent said, "The new low prices are expected to hold within a narrow range, since we have had the largest India-Pakistan jute crops in ten years. 1951-52 totals were 12 million bales and 1952-53 totals are estimated at 12.5 million bales. This compares with crops averaging only 7.6 million bales over the past ten years".

Mr. Nugent said, "Indian burlap, produced for the large bag manufacturing industry in the United States, has been imported in quantities sufficient to build up United States stocks to 196 million yards currently as against 122 million yards a year ago".

He said, "Today's advantageous price and supply situation puts burlap and burlap bags on a firm foundation again after unsettled conditions following World War II and the inception of the Korean conflict".

"Another consideration in the current interest in using burlap," Mr. Nugent said, "is the long established market for the second hand burlap bags. These can bring from a third to a half the value of the original burlap bag. In addition, packers and shippers with large volume customers have developed profitable "return bag" programs with their customers".

Mr. Nugent reported that, "A number of instances of increased interest in burlap have come to the attention of the Burlap Council currently. These include manufacturers and shippers of feed, seed, meal, coffee and other bulk products. For example, Long Island potato shippers, this fall, have increased their use of burlap bags to 50 per cent of the crop from 20 per cent, last year." Mr. Nugent stressed "The widespread and traditional preference among many farm groups for burlap bags because of the many utility uses around the farm of the empty bags—as well as their resale value".

# Containers Readily Available With Exception of Metal Cans

Metal cans for products other than perishable foods are expected to be scarce until requirements for perishable foods are fully met, the Containers and Packaging Division of the National Production Authority, Department of Commerce reported recently.

The forecast is contained in a 48 page "Containers and Packaging Industry Report." Second quarter 1952 activity in the containers and packaging industries and the outlook for the future are reviewed in the report.

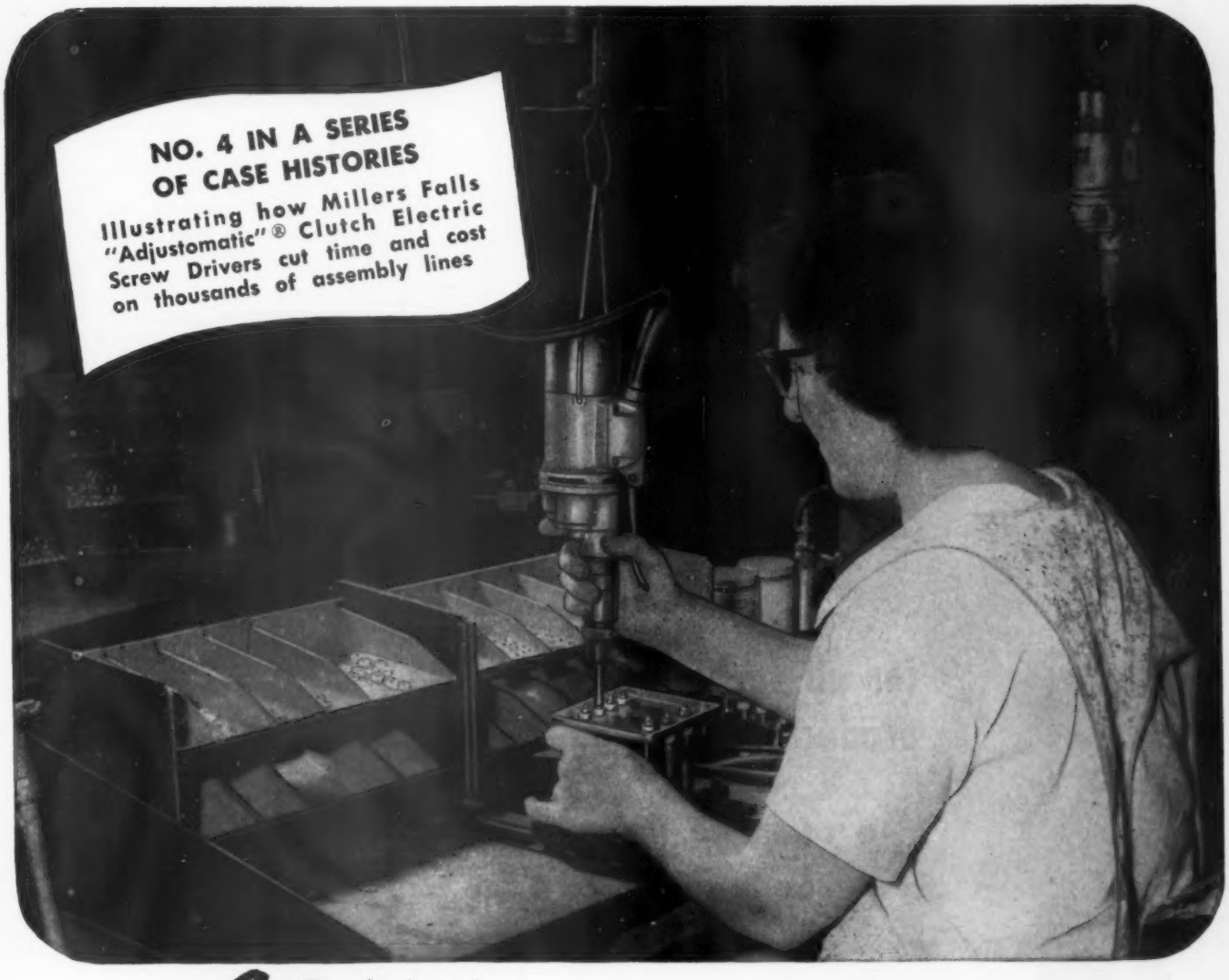
The report presents a summary of second quarter production and business activity in 28 industries of the container and packaging field, an article on "Major Considerations of Industrial Palletization" and a digest of local container trends and current conditions as reported by Department of Commerce field offices in the Pacific Northwest, West Coast, Southwest, Mid-West, North-Central, South and Southeast, Middle Atlantic New York City, and New England areas.

The report says the steel strike had only a comparatively minor effect on total demand and output but adversely effected metal containers when captive steel drum plants were shut down and metal can manufacturers had to consume inventories to maintain output.

Aside from metal cans, all other types of containers will be readily available for Fall demand. The outlook indicates a moderate increase in business in the last half of 1952.

Growth of the pallet industry is reviewed in an article which points out that in 1939 only 16 manufacturers were engaged in producing wood pallets. A pallet is a moveable platform used in warehouses. Estimates for 1950 place the number at about 1,000 with 700 small part-time commercial manufacturers. Average yearly output of wooden pallets amounted to about 10 million during World War II: post-Korea output is estimated at 23 million wooden pallets a year. As an example of container-pallet standardization, the article cites the approach made to the problem by the Brooklyn Naval

(*Please turn to page* 340)


NO. 4 IN A SERIES
OF CASE HISTORIES
Illustrating how Millers Falls "Adjustomatic"® Clutch Electric Screw Drivers cut time and cost on thousands of assembly lines

# AGAIN— Millers Falls Drivers solve one of the most exacting assembly jobs in industry

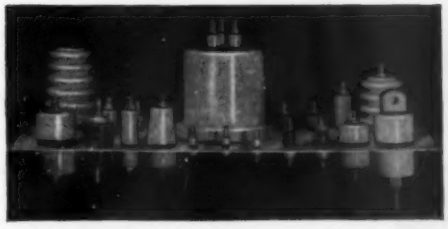
High-speed nut-running on Lundey terminals — many production men would hesitate to attempt the job with a power driver.

Torque limits are hair fine. Too little, and connections may loosen. Too much, and brittle ceramic insulators chip and crack.

Yet, Millers Falls versatile No. 50 Electric Screw Drivers are handling this difficult assignment quickly, cheaply, accurately for a leading electronics manufacturer. Thanks to the *patented*, "Adjustomatic" Clutch, these powerful drivers control torque with extreme precision — maintain exact setting month after month.

Velvet smooth and vibrationless, they have all the punch and endurance needed for continuous high speed production. Write for full information. Capacities for driving machine screws up to 3/8", wood screws up to #20 — 2 1/2" — with torque readily adjustable for any requirement from inch-ounces to foot-pounds.

MILLERS FALLS COMPANY, Greenfield, Massachusetts



**WE HAVE YET TO SEE** an assembly operation too delicate for Millers Falls "Adjustomatic" Clutch Screw Drivers. Lundey terminals are typical — requiring super-sensitive torque control to prevent breakage. On all sizes — right down to 1/16" conductors with 1-72 NF-2 threads — Millers Falls Drivers deliver outstanding performance.

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*The Mark of Superiority*

wise buyers know
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SOCKET SCREW PRODUCTS

for all socket screw products

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Safety Socket Screw's entire design and manufacturing facilities are devoted exclusively to socket screw products. Here's a concentrated single-mindedness that assures you always of the absolute finest in socket screws plus the widest possible selection and fastest deliveries. For every application—whether it's for huge, rugged machinery or delicate precision instruments—insist on "Safety-first" at your Industrial Distributor.

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SAFETY SOCKET SCREWS
safe, sure, speedy!

SOLD THROUGH AUTHORIZED INDUSTRIAL DISTRIBUTORS

SAFETY SOCKET SCREW COMPANY
6502 Avondale Avenue, Chicago 31, Illinois

(*Continued from page* 338)

Clothing Depot during World War II. The Depot solved its task by fitting the container to the pallet and the pallet in turn to the boxcar.

Labor and time savings accomplished were unprecedented. Further study of the problem has resulted in the entire military system now utilizing the 48" by 40" pallet in order to facilitate all commercial carrier shipments.

Second quarter activity and the general current outlook in various branches of the industry are presented as follows:

*GLASS CONTAINERS*—Overall industry operation above the preceding quarter although seasonal business was delayed in some areas because of user consumption of inventories. Production and shipments decreased from the second quarter 1951 level.

*COLLAPSIBLE TUBES* — Second quarter business increased 14.9 percent over the 1.4 million gross shipped in the first quarter. Dentifrice tubes showed the largest increase, 27.7 percent. Lead and aluminum supplies presented no difficulties. Tin consumption increased 24.4 percent, lead, 29.4 percent and aluminum, 4.0 percent over first quarter 1952. Third quarter volume is expected to decrease 10 percent.

*ALUMINUM FOIL*—Shipments approximated first quarter levels but were substantially below second quarter 1951. Demand was slow with users inventories sufficient for immediate needs, order backlogs were down and business was conducted on a current basis. Future prospects depend on the development and promotion of new products.

*STEEL DRUMS AND PAILS*—Because of the steel strike most major producers closed operations or operated on a token schedule. Shipments of heavy drums dropped below first quarter 1952. However, shipments of steel package, kegs and pails increased 9.6 percent over the preceding quarter. While stocks of drums and packages increased over 1951 levels, unfilled orders generally decreased.

*PACKAGING PLASTICS*—Demand for film continued slow although some improvement was noted by the end of the second quarter. Inventory reductions by converters and consumers and close buying for replenishment purposes were major factors responsible for slow business. A general improvement in business is expected during the remainder of the year.

*FIBRE DRUMS*—Second quarter operations continued at approximately first quarter level with slight increases noted. Shortages of steel reduced the output of certain drum sizes.

*PAPER SHIPPING SACKS*—Production was below first quarter volume. Bag users' inventories continued to decrease with some stocks below levels of previous years. A strenghtening demand was noted by the end of the quarter.

*SET-UP PAPER BOXES*—Production was 5.2 percent below the first quarter of 1952. Order books showed some improvement during the latter part of

(*Please turn to page* 342)

# Simplify Valve Inventories!

## These "RENEWO" Valves Convert From Fullway To Plug Type!

Lunkenheimer "Renewo" Valves feature renewable and regrindable seats and discs . . . convertible from fullway to plug type. Stockroom investment and maintenance expense can be cut substantially by users who standardize on the line for all their 200-lb. bronze globe valve needs. A similar line is also available in the 300-lb. class.

"Renewo" Valves can be reground, renewed, or converted easily.

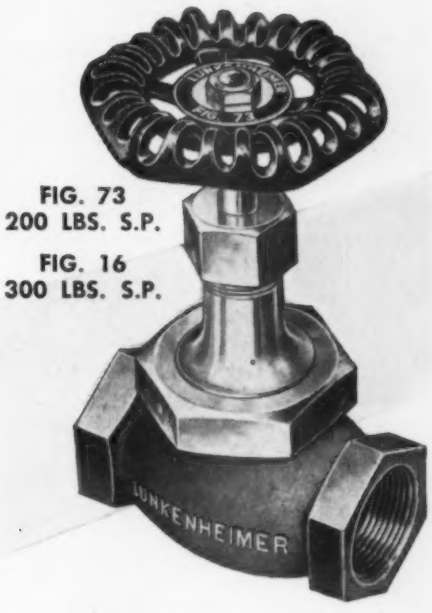
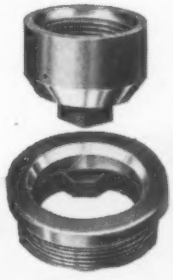



**FIG. 73**
**200 LBS. S.P.**

**FIG. 16**
**300 LBS. S.P.**

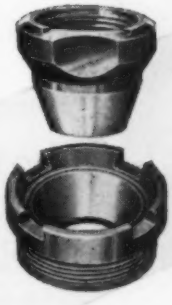


(FULLWAY TYPE) Seats and discs of hard, wear-resistant nickel alloy. Excellent for general service applications. One of the most popular valves ever designed.

**FIG. 73 PS**
**200 LBS. S.P.**

**FIG. 16 PS**
**300 LBS. S.P.**

(PLUG TYPE) Seats and discs of 500 Brinell Stainless Steel. Superior for severe erosive applications. Maximum resistance to effects of close throttling.



***WRITE FOR*** Circular 577, which describes the "Renewo" line in detail. The Lunkenheimer Co., Box 360M. Cincinnati 14, Ohio.

**BRONZE • IRON • STEEL**

# LUNKENHEIMER

THE ONE *Great* NAME IN VALVES

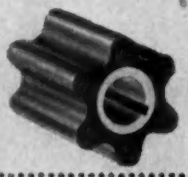
L-952-5

Roth makes Rubber Resist 500°F. Heat

Roth makes Rubber Resist -110°Cold

Roth makes Rubber Resist Oil and Gas

Roth makes Rubber Resist Weather and Abrasion



Roth makes Rubber Bond to Metal

Roth makes Rubber to Your Specifications

ROTH RESEARCH BRINGS RESULTS WITH RUBBER!

**WRITE, WIRE OR PHONE...**

Roth will gladly help you develop bids, quote on present rubber requirements or create a special formula to cut costs, boost output or simplify production.

ROTH RUBBER COMPANY

1858 S. 54th Avenue • Chicago 50

Custom Manufacturers of Industrial Rubber Products since 1923


(*Continued from page* 340)

the quarter. A general improvement is predicted.

*FOLDING PAPER BOXES* — Production was down 25.9 percent below the same quarter of 1951 and slightly below the first quarter of 1952. Shipments also were down. Intensified competition lowered prices in many areas.

*PAPER MILK CONTAINERS* — Production was 20 percent above the first quarter. Heavy demand continued to exceed supplies and steady demand is expected throughout the year.

*BULK ICE CREAM CONTAINERS* —The expected seasonal increase in demand did not fully materialze. Total output decreased about five percent below the first quarter. Seasonal business picked up in June and continued into July with a 10 percent rise in volume anticipated for the third quarter.

*GROCERY, VARIETY AND SPECIALTY BAGS*—Operations were better than 60 percent of capacity; demand and output both considerably less than a year ago. Interest increased at the turn of the third quarter.

*SPECIAL FOOD CARTONS AND PAPER PAILS* — Volume was influenced by a heavy seasonal demand for ice cream and frozen food containers. Second quarter business pushed the six-month total to less than five percent below the first half of 1951.

*FIBRE CANS AND TUBES*—Operations were at about 70 percent of capacity on a one-shift basis; production and sales of tubes and cores were down 12 percent below the first half of 1951. Business the second half of 1952 is expected to increase by from eight to ten percent.

*CORRUGATED AND SOLID FIBRE SHIPPING CONTAINERS* — Purchases continued stable. Business tapered off in the first half of the year but Fall demand is expected to develop and carry through the most of the year.

*PAPER CUPS AND NESTED FOOD CONTAINERS* — Production decreased progressively from the third quarter of 1951. Incoming orders increased considerably over the first quarter level with drinking cups primarily responsible.

*TIGHT COOPERAGE* — Whiskey barrel production declined and several plants were shut down. Business is expected to increase in the Fall. Substantial orders were received for condensed milk barrels with demand heaviest at the end of the quarter.

*SLACK COOPERAGE*—Operations were at about 50 percent of capacity. Demand for powdered milk barrels generally was "good." Production of meat barrels was maintained at a relatively satisfactory level.

*MILK BOTTLE CRATES*—Combination wood-steel crate shipments were below the second quarter of 1951. Unfilled orders at the end of the quarter amounted to over 200,000 units. Comparable production of all-steel crates was up 17.6 percent. Seasonal demand also upped output 42.6 percent over the preceding quarter.

(*Please turn to page* 346)

# Markings mean just what they say on WeldELLS®

**A VOLUME OF USEFUL DATA ON A SINGLE SHEET**—Sizes, thicknesses and dimensions of all commonly used WeldELLS and Taylor Forged Steel Flanges ingeniously condensed on a heavy durable, letter-sized card. Indispensable for piping men. Coupon brings free copy.

No other fittings for pipe welding are so true to their markings as WeldELLS — so absolutely uniform, mechanically, metallurgically, dimensionally.

It would be bad business for us to say this if thousands of users had not already said it for us and to us. "There are no bad ones" is nearly always the foremost reason given by practical men for insisting on WeldELLS.

Pick up any WeldELL and check it against the tabulation of its size, wall thickness, and other dimensions. It will be right on the head. And it will be right on the head in plus-value features, too—features that are combined in no other fittings.

Remember that the finest line of welding fittings is also the broadest line. Coupon brings your copy of useful data described below.

TF

# TAYLOR FORGE

**TAYLOR FORGE & PIPE WORKS**

General Offices and Works: P. O. Box 485, Chicago 90, Ill.
Offices in all principal cities
Plants at: Carnegie, Pa.; Fontana, Calif.; Hamilton, Ont., Canada

Please send a copy of your data sheet covering Taylor Forge Welding Fittings and Forged Steel Flanges.

NAME_____

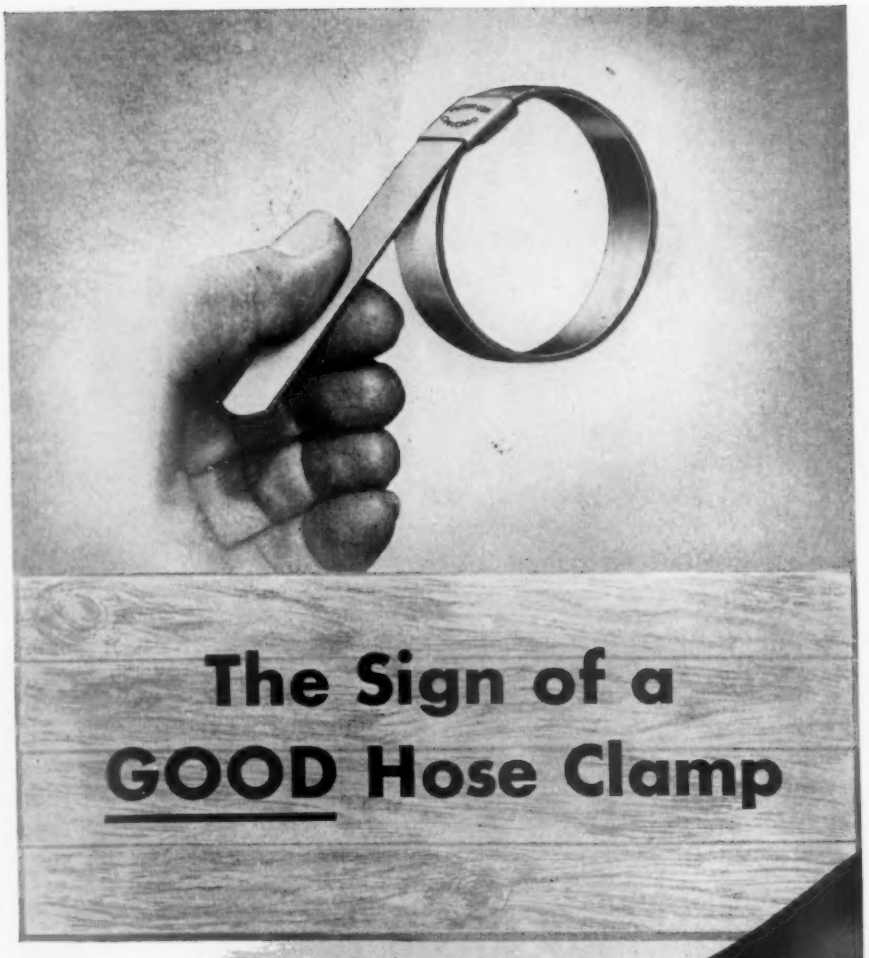
POSITION_____

COMPANY_____

STREET ADDRESS_____

CITY_____ ZONE___ STATE_____

517-115x Mail to Taylor Forge & Pipe Works, P. O. Box 485, Chicago 90, Ill.

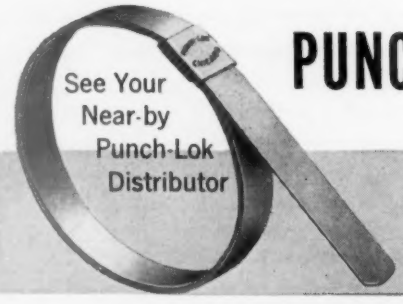


The Sign of a GOOD Hose Clamp

Punch-Lok Hose Clamps

Designed for applications where strength, durability, and economy are wanted, double-wrapped Punch-Lok Hose Clamps withstand vibration, have no projections to snag, and are easily locked in place to make a leakproof connection that outlasts the life of the hose.

Everlasting—Everywhere—Punch-Lok for Safety




PUNCH-LOK *Company*

321 North Justine Street
Chicago 7, Illinois

(*Continued from page* 342)

*VENEER PACKAGES* — Demand normal. Overall first half shipments were slightly above normal with prospects for a continued "good" year.

*NAILED WOODEN BOXES*—Demand dropped with production for the first half of the year 10 percent below 1951. Manufacturers serving industrial trade are expecting a volume improvement by the end of the third quarter.

*WIREBOUND BOXES AND CRATES*—Total volume declined 3.4 percent below the second quarter of 1951. Boxes and crates for the military however, were up 394 percent. Production of fresh fruit and vegetable boxes increased 56.3 percent.

*METAL CANS* — Seasonal demand and the steel strike were major factors affecting operations. Demand increased substantially over the first quarter. Lack of shipments from struck mills and inventory consumption seriously reduced operations by the end of the quarter. Non-food cans were extremely short. Total shipments changed insignificantly from the comparable quarter of 1951.

*PACKAGING CLOSURES* — Many manufacturers received little or no plate during June resulting in serious inventory depletion. Production and shipments of metal and plastic caps continued at 1951 levels; shipments of commercial and home canning closures were down.

*TEXTILE CONTAINERS*—A general pick-up in burlap bag demand and production was noted. Although output was eight percent below the 1951 level, it was 50 percent above that of the first quarter of 1952. Cotton bag business increased over the comparable quarter of 1951 although demand softened from the first quarter 1952.

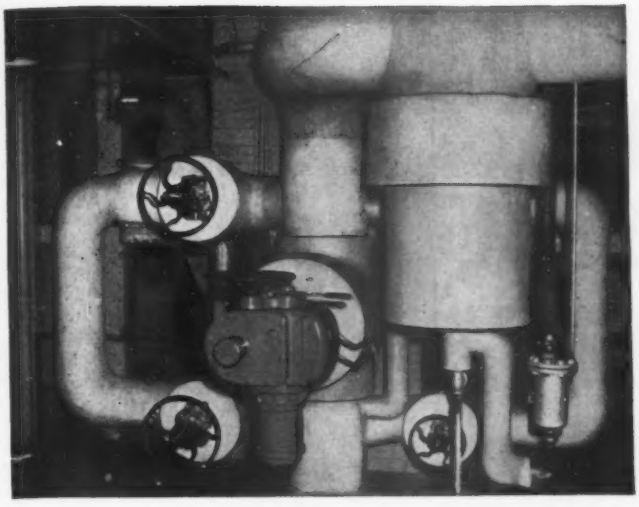
*REELS AND SPOOLS*—Production followed the overall softening of demand. Inventories of steel generally were adequate although shortages of hot rolled billets and sheets were noted. An upturn in incoming orders was noted.

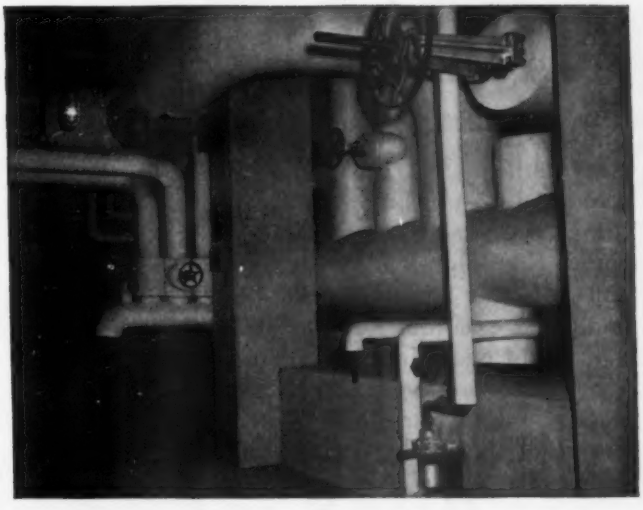
*STAMPED CONTAINERS* — Supplies of metals limited output. Demand continued to expand. Order backlogs varied with 45 days typical.

*STEEL STRAPPING*—Demand declined from the first quarter. The strike in the steel industry, a major user of strapping, further lessened demand an estimated 12 percent. Order backlogs at the end of the year indicated that output will remain high for the remainder of the year.

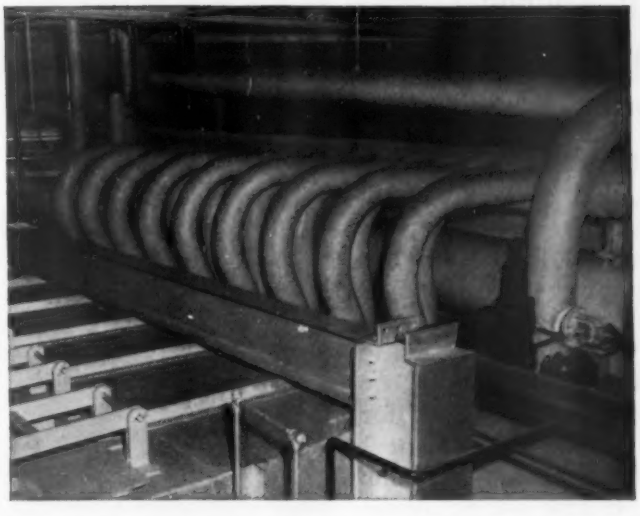
*GAS CYLINDERS*—Steel inventories were sufficient to maintain production at 80 percent of capacity. Demand for high pressure cylinders continued heavy with a four-month order backlog. The present level of operation is expected to continue. Seasonal demand for low pressure cylinders, other than acetylene, dropped below the first quarter.

Copies of the report are available at the NPA Publications stockroom in the New GAO Building, or copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C.





# High temperatures call for the high efficiency of K&M insulations



One of the most efficient combinations for insulating equipment with temperatures up to 1900° F. consists of K&M "Featherweight" 85% Magnesia and Hy-Temp Insulation.

Hy-Temp Insulation, which has exceptional heat-resisting qualities, is applied directly to the hot surface. When a sufficient thickness is used, the temperature of the insulation's outside surface can be brought to 600° F. or lower. "Featherweight" 85% Magnesia, which has a higher insulating value, is then applied directly over the Hy-Temp Insulation. Thus, the special qualities of both materials are effectively used.

Your K&M distributor, an experienced applicator, will gladly answer your questions about these products. Or, write to us for complete information.

K&M best in asbestos ®

**KEASBEY & MATTISON**
COMPANY • AMBLER • PENNSYLVANIA

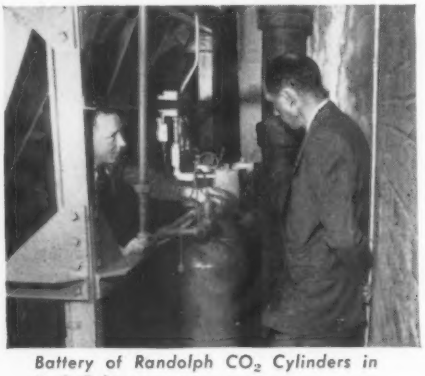
# U. S. TOBACCO COMPANY INSTALLS RANDOLPH AUTOMATIC FIRE SYSTEM

The U. S. Tobacco Company's large multiple unit dust collector presented an unusual and worrisome fire hazard, but this 150 pound Randolph Automatic System not only automatically detects and extinguishes any fire that might occur in the unit, but also shuts down the dust collector blower, and rings an alarm located on one of the lower floors of the building.

*Officials of the U. S. Tobacco Co., and the Nashville Fire Department inspect the Randolph Automatic System installed on giant dust collector.*

## Kills Fire, Sounds Alarm and Shuts Down Machinery

As in the U. S. Tobacco installation, Randolph Systems, in addition to automatically killing the toughest fires in split seconds, can also be equipped with duct and door closers, motor, fan and machinery shut-offs, warning alarms and other auxiliary safety devices. Systems are designed for both local application or total room flooding and are ideal for dip tanks, baking ovens, spray booths and hundreds of other applications.



*Battery of Randolph $CO_2$ Cylinders in U. S. Tobacco system.*

***Free Catalog and Engineering Service Available Without Cost***

Randolph's FIRE HAZARD INDEX gives correct equipment and methods for protection against 590 typical fire hazards. Write for your free copy today. Address: Randolph Laboratories, Inc., 1 E. Kinzie St., Chicago 11, Ill.

### McDONALD NAMED NEW HEAD OF NPA

Richard A. McDonald has been appointed Administrator of the National Production Authority, Washington, D. C., succeeding Henry H. Fowler who is now Director of the Office of Defense Mobilization. Horace B. McCoy, a career Government employee, has been appointed to the post of Deputy Administrator of NPA.

Mr. McDonald is on leave from the Crown-Zellerbach Corp., of San Francisco. He has been associated with NPA since February of this year. Mr. McCoy, new serving his 33rd year in Government, formerly was Assistant Administrator of NPA.

### MAGNESIUM ASSOCIATION ANNUAL TO BE HELD IN NEW YORK

The Eighth Annual Meeting of The Magnesium Association will be held November 10 and 11 at the Hotel Biltmore in New York City according to announcement by President A. W. Winston, 122 East 42nd St., New York. The program consists of a casting session, technical session and general session with papers by people in the magnesium industry and in industries using magnesium. A display of magnesium forms and products will be exhibited during the meeting.

Panel meeting on the morning of November 10 will include discussions on large radar sand castings, investment castings, shell mold castings, and other subjects.

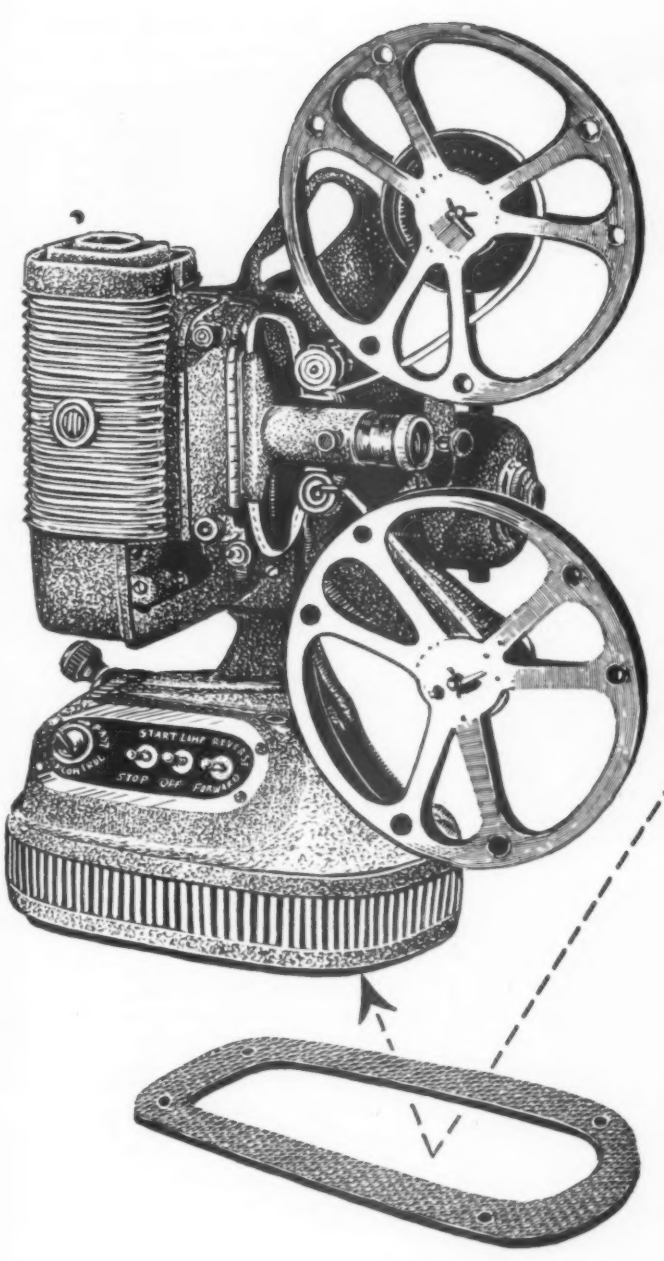
### FIRM DEPRIVED OF ALUMINUM ALLOTMENTS

Brown & Grist, manufacturers of aluminum windows, Newport News, Va., was found to have used 92,724 pounds of aluminum without proper authorization between January 1, 1952 and April 1, 1952, by Hearing Commissioner Samuel H. Crosby, according to the National Production Authority.

Commissioner Crosby, after hearing evidence of the charges ruled that allotments of aluminum controlled materials be reduced by withholding 30,908 pounds in the fourth quarter of 1952 and similar amounts in the first and second quarters of 1953 to make up for the excess of 92,724 pounds which the company had used. The company was adjudged by the Hearing Commissioner to have violated NPA Order M-7 (Aluminum for Civilian Use) and CMP Regulation 1 (Basic Rules of the Controlled Materials Plan).

### NAMED DA OF SDPA

Yngvar Brynildssen, who has been regional director of the SDPA for the Chicago Region which includes Illinois, Indiana and Wisconsin, has been named Deputy Administrator of the Small Defense Plants Administration, according to recent announcement issued by John E. Horne, Administrator, Washington.



# extra performance

## at less cost with

# SPONGEX CELLULAR RUBBER

**DeJUR 8 mm. movie projector uses SPONGEX base to dampen vibration, prevent crawling and protect surfaces.**

A simple die-cut shape from Spongex sheet stock, gives DeJUR owners a projector that has less motor vibration, sits more firmly and will not crawl on smooth surfaces.

This inexpensive extra wins thousands of friends for DeJUR. Perhaps your product could use Spongex to increase its efficiency, reduce costs or give better service.

There are literally hundreds of uses for Spongex sheet stock. You can cut your own applications from Spongex sheets or rolls—or we'll die-cut to specification.

If you need cellular rubber with special qualities—such as flame resistance, oil resistance—performance under high or low temperature—there's a Spongex sheet stock compounded for the job.

**SPONGEX®** Cellular Rubber

used for cushioning, insulating, shock absorption, sound and vibration damping, gasketing, sealing, weatherstripping and dust proofing.

**THE SPONGE RUBBER PRODUCTS COMPANY**

504 Derby Place, Shelton, Conn.

# ANY Bearing you need from JOHNSON

Here is the motor bearing service you need. Over 300 Johnson Electric Motor Bearings are available from authorized distributor and warehouse stocks. Every one is listed in the Johnson Catalog by number, manufacturer's number, size and motor type. Merely refer to this catalog . . . then call your distributor.

JOHNSON BRONZE COMPANY
450 South Mill Street • New Castle, Pa.

Write today for the NEW Johnson Bearing Catalog

Sleeve Bearing Headquarters Since 1901

JOHNSON JB BEARINGS
Sleeve-Type


## JOHN E. HORNE NAMED ADMINISTRATOR OF S.D.P.A.

John E. Horne, who has served as Deputy SDPA Administrator since last November, has been appointed Administrator of that agency, succeeding Telford Taylor.

Field office of the SDPA has been opened in Pittsburgh under the supervision of the Philadelphia Regional office. It will be in charge of Paul B. Crabtree and will be located temporarily at the Smaller Manufacturers Council of the Chamber of Commerce, Chamber of Commerce Building, Pittsburgh 19, Pa.

Joseph G. Dellert has been appointed Regional Director of the SDPA for the Philadelphia region, which includes Pennsylvania, Delaware and the Camden, N. J. area.

SDPA field office has been opened in Buffalo, in the U. S. Post Office Building, 117 Ellicott Street, under the supervision of the SDPA Regional office in New York City.

## SPECIFICATIONS FOR COPPER AND COPPER-ALLOY WELDING ROD

The latest specifications for filler metal, issued jointly by the American Welding Society and American Society for Testing Materials (AWS Designation A5.7; ASTM Designation B 259), covers copper and copper-alloy welding rods for use with oxy-acetylene, carbon arc and inert-gas metal-arc (nonconsumable electrode) welding.

Copies of "Specifications for Copper and Copper-Alloy Welding Rods" are available at 40¢ each from either the American Welding Society, 33 W. 39th St., New York 18, N. Y., or American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa.

The twelve classifications established by the specifications include copper, silicon bronze, phosphor bronze, copper-nickel, naval brass, manganese bronze, low-fuming bronze, nickel bronze and aluminum bronze welding rods.

As with the other filler metal specifications for copper-alloy electrodes and for steel and aluminum filler metal, the new specifications specify the chemical composition, mechanical properties and usability characteristics of each classification, with corresponding tests for verifying these properties. An appendix aids in the selection of the best welding rod for a given need and using it in the most efficient way.

## TANNING MATERIAL ORDER M-57 REVOKED

Unrestricted use of vegetable tanning materials became possible with the recent revocation of Order M-57 by the National Production Authority. With the revocation, NPA freed the leather and leather products industry of its last material control. However, certain users and producers of quebracho, chestnut and wattle are still obliged to file periodic reports.

# ...BUT IT BECOMES A PLASTIC

Most people think those shiny, sturdy cafeteria trays . . . resistant to everything from grease to hot detergents . . . are all plastic, but actually they're made with paper. Sheets of a special Riegel "saturating" paper, impregnated with thermosetting resins, are piled up to the right thickness and molded under high heat and pressure into a strong, dense, impervious tray.

This is just one of hundreds of examples of Riegel's ability to make paper for almost any need. We now produce more than 600 grades . . . many with properties that would surprise you. Tell us what you would like paper to do for *you*. If we can't supply it, we will be glad to refer you to others who can. Write us now.

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**P. O. Box 170 · Grand Central Station · New York 17, N. Y.**

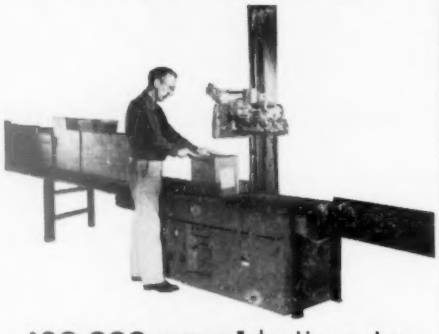
# Riegel

**• TAILOR-MADE PAPERS FOR INDUSTRIAL USE •**

# how two companies cut packing costs

**Read this if you ship in corrugated or fibre cartons!** It tells how two well known manufacturers cut packing costs . . . by thousands of dollars *annually* . . . with International Carton-Stapling Machines. Here's the story:

**$28,000 saved** by Harrison Steel Cabinet Co., manufacturers of kitchen wall, base and sink cabinets. Harrison improved working conditions . . . doubled production.



**$20,000 saved** by Uarco, Inc., manufacturers of business forms. Closing 2,500 cartons formerly took 48 man-hours . . . now it takes 12 man-hours.

**40 models...from portable units to big multi-head automatic models. Write for details.**

**INTERNATIONAL STAPLING MACHINES**
INTERNATIONAL STAPLE & MACHINE COMPANY
804 E. Herrin St., Herrin, Illinois


## NPA DISTRIBUTING INVENTORY OF 30,000 GOVERNMENT-OWNED MACHINE TOOLS

The National Production Authority has reported that it is distributing an inventory of 30,000 Government-owned machine tools and that, since May, 2,117 of these tools have been leased to military and defense-supporting contractors to meet production schedules for such vital items as aircraft engines, tanks, shells, and other materiel required for defense.

The Government-owned tools are being made available to industry because of current shortages, occasioned partly by demand for certain types and sizes of machine tools, and partly by long lead-times.

To promote distribution of Government-owned machine tools, a "machine tool inventory center" formally identified as PECIG (Production Equipment Central Inventory Group) was established.

PECIG estimates its inventory of 30,000 machine tools to have a value, at today's replacement costs, of approximately $450 million.

The 2,117 tools leased in the past four months have an estimated value of $29.7 million.

### PECIG Under NPA

Since mid-May of 1952, NPA's Metalworking Equipment Division has had responsibility for PECIG, following operation of the group for a year by various branches of the Armed Services and the Munitions Board.

In its report of activities in this field, NPA emphasized that:

"We are eager to find thousands more contractors engaged in defense-supporting activities who could profit by immediately contacting PECIG and screening its records to ascertain if the equipment they urgently need can be supplied to them."

During the past 90 days, NPA said, PECIG efforts have shown phenomenal growth and have been successful in breaking bottlenecks large and small in both military and defense-supporting production.

### All Types and Sizes

PECIG allocations may be made to military and defense-supporting contractors, and cover virtually every type and size of machine tool and related production equipment, including general, single, and special-purpose tools.

The files of PECIG list boring machines, die sinking machines, drilling machines, gear cutting machines, grinding machines, lathes, milling machines, planers, shapers, and other equipment.

NPA said that most of its requests under the PECIG program are for general purpose tools, scarce because of their versatility and consequent heavy demand. These hard-to-get units are listed in Exhibit D of NPA Order M-41, and otherwise are obtainable from producers only on rated orders.

(*Please turn to page* 356)

When employees hands are comfortable and properly protected by the *right* gloves for the job:

- there are fewer work stoppages
- injury claims decrease
- work goes faster, production increases

*—all at lower per hour glove cost to your plant!*

*N-36 medium weight all neoprene glove, 11" length. Snug curved fingers, non-slip grip surface afford almost bare-hand dexterity.*

Long-wearing liquid-tight neoprene Stanzoil industrial gloves resist damage from acids, oils, solvents, caustics. 32 styles, weights, sizes, colors. New PIONEER catalog shows you *at a glance* how to select the most efficient and economical gloves for each operation. It pays you to write for your copy today.

*Industrial Products Division*
The PIONEER Rubber Company
640 Tiffin Road • Willard, Ohio

STANZOIL

Quality Gloves for over 30 Years

# BALMASEPTIC

Combines the fine qualities and delightful scent of Dolge premium BALMA liquid soap with Hexachlorophene, the antiseptic agent used in modern surgical soaps. Regular washing with BALMASEPTIC not only cleans thoroughly but deposits on the skin a non-irritating film which reduces bacteria as much as 95%. Here's a true deodorant for shower as well as wash-up use, insuring "round-the-clock freshness."

**Efficient dispensing equipment available. Ask your Dolge Service Man for demonstration.**

Dependable DOLGE
WESTPORT, CONNECTICUT

# Now . . . 2 New
## AO COVERGLAS GOGGLES
## Fit Over Safety And Personal Glasses

**NEW**
**Safety Goggles**

#326

#327

**NEW – 4 WAYS!**

1. New Cup Size and Shape
2. New Lens Size and Shape
3. New Side Shields
4. New Easy Lens Replacement

AO's newest development in eye protection—Chippers' and Welders' Coverglas Goggles—can be worn over practically every pair of personal glasses (even the biggest frames) and most types of safety prescription goggles *with and without side shield.*

Wider vision, too, because the lenses are larger and scientifically designed to give up to 20% more vision. Yet, with all these features the goggles weigh but a fraction of an ounce more than ordinary Coverglas goggles . . . cost only slightly more.

These goggles are the newest . . . and two of the greatest . . . developments since the advent of safety goggles. Get all the facts about these two outstanding Coverglas goggles from your AO Safety Products Representative. He can supply you.

**QUICK FACTS**

- Lens easily replaceable from rear (not front) by means of a spring clamp—no tools needed
- Lightweight, brown plastic cups fit face snugly, won't conduct heat or electricity
- Light-tight side shields for welders (on No. 327 goggle) provide indirect ventilation
- Bridge—High-grade leather. Instant adjustment
- AO worker-lab tests show much greater field of vision and increased comfort
- All-rubber headband, easily adjustable

"326" Chippers' Coverglas goggle supplied with regular Super Armorplate lenses. "327" Welders' Coverglas goggle supplied with regular Noviweld lenses and cover lenses.

**AO's Industrial Vision Program Increases Production, Decreases Accidents. Write today for booklet "Improved Industrial Vision" to 1011 Vision Park, Southbridge, Mass.**

American Optical COMPANY
SAFETY PRODUCTS DIVISION

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES

# Glass

## MAY HELP TO IRON OUT

### a serious production problem

GLASS, when used as a substitute for critical metals, may prove much more versatile than you had imagined. Here is a material that can be formed to almost any shape . . . it has no taste or odor to impart . . . it will not rust, corrode, shrink, or warp . . . it is hard, strong, and resists shocks, other than sudden shocks.

We invite you to explore the possibilities. Our Design and Engineering Departments will cooperate to the fullest extent.

Indiana glass

**INDIANA GLASS COMPANY**

*Established 1907*

**DUNKIRK, INDIANA**


(*Continued from page* 354)

#### Storage Centers

Allocations of PECIG tools are from storage at two large Air Force centers at Marietta, Ga., and Omaha, Neb.; Navy centers at South Charleston, W. Va., Mechanicsburg, Pa., Clearfield, Utah, and Scotia, N. Y. Army posts scattered throughout the country; Maritime Administration reserves at three large shipyards on the Pacific Coast, and in Wilmington, N. C.; and General Services Administration storage points, chiefly in the East.

Under certain circumstances, equipment also is available from standby "package plants." These are plants the Government has built and equipped for use in the event of a national emergency.

#### Fully Decribed

PECIG files list the following information as to each available piece of equipment:

Standard commodity classification code, type of equipment, size, Government tag number, manufacturer, model number, serial number, owning agency or service, year manufactured, condition, full description, electrical charateristics, acquisition cost, replacement cost at today's price levels, estimated repairs (if any), storage location, and whether the tool is special, single-purpose, or general-purpose.

#### How to Obtain

PECIG neither maintains nor distributes lists of available equipment.

Military contractors must submit written requests for production equipment to their military contracting officer (or representative), who will determine the justification of the request. If approved, and tools are available, arrangements will be made for on-the-site inspection.

Defense-Supporting contractors must submit requests in triplicate to the NPA Industry Division having jurisdiction over the manufactured product, and include complete justification of need for the equipment.

## SDPA LEAFLETS ON MACHINING CAST IRON, REDUCING ACCIDENTS

Two new leaflets, one on "Machining, Repairing and Heat Treating Cast Iron Work Pieces" and the other "Reducing Accident Costs Through Reports and Records", have been issued by the Small Defense Plants Administration. The leaflets are No. 12 in the dual series of Technical Aids and Management Aids issued by the agency's Management Service Division, and are available without cost from SDPA field offices. The technical aid leaflet was designed particularly for the small machine shop specializing in finishing operations on cast iron. The management aid leaflet is the fourth in a series of six leaflets on small plant safety prepared jointly by the Safety Engineering staff, Bureau of Labor Standards, U. S. Department of Labor, and the SDPA.

# on Allegheny Metal Plates

**For certified data on individual grades of Stainless Steel, use**

**ALLEGHENY LUDLUM BLUE SHEETS**

There is a Blue Sheet for each individual grade of Allegheny Metal, giving full information on its physical and chemical properties and characteristics. Let us send you this certified, laboratory-proved data on the stainless grades in which you are interested.

**ADDRESS DEPT. P-35**

## WRITE FOR YOUR COPY!

For any job which involves the handling of large volumes, heat and high pressures—either singly or all at one time—Allegheny Metal solid or clad plates are produced in the exact stainless grade required to combat corrosion, oxidation and contamination of the product.

Some of these grades are *new* . . . comparatively recent developments of our research and experience as a pioneer and leader in stainless steel production. Others are improved versions of older analyses. The latest information on the entire subject of stainless plates is available to you in the booklet illustrated above—32 pages of valuable data on types, sizes, finishes, fabricating methods and uses, including ASTM and ASME boiler codes.

Specify "Allegheny Metal" for complete reliability in stainless steel plates, and write for your copy of the A-L Plate Book. ● *Address Allegheny Ludlum Steel Corporation, Oliver Building, Pittsburgh 22, Pennsylvania.*

You can make it **BETTER** with

# Allegheny Metal

W&D 4877

AL TIME-TESTED STAINLESS STEEL

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## Is of highest quality because:

- Our production methods are based on scientific principles which we have developed through painstaking research.
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- Careful inspection by highly trained technicians insures that mistakes are caught in our plant—not yours.

***Immediate delivery of standard stock sizes of Teflon rods, sheets, molded and extruded tubing from our plant or from the following distributors:***

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**Please mail _____ copies of price and size lists to:**

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**(name and position)**

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**ETHYLENE CHEMICAL CORP**

245 BROAD STREET SUMMIT, N. J.


## The Income Tax Collector Looks at Plant Property

(*Continued from page* 120)

zable from the sale or other disposition of items recovered when property has become no longer useful in the taxpayer's business and is demolished, dismantled, or retired from service. When reduced by the cost of demolishing, dismantling, and removal, it is referred to as net salvage. In principle, the estimated net salvage should serve to reduce depreciation as computed or a reduction in the rate. In either instance the amount of net salvage should actually, or in effect, be a credit to the depreciation reserve. Where the basis or rate for depreciation is not reduced for estimated salvage, all net receipts from salvage should be considered income."

*Q. How can I tell which maintenance costs are considered repairs for tax purposes, and which must be depreciated over several years?*

There is a simple yardstick. It is in the form of a question: Does this add to the value, or merely protect and maintain? If the improvement actually makes the property worth more money, then it must be depreciated. If it protects, cleans, or merely maintains, then it is a repair or maintenance expense, and may be charged directly against the year's receipts on the income tax return.

* * *

## Purchasing for Cadillac's Cleveland Tank Plant

(*Continued from page* 93)

price reductions based on increased efficiency and cost economies in his plant operations.

3. It is necessary to build a close working relationship with suppliers so that Cadillac engineering knowledge and experience can be put to work to help solve their problems and to accomplish a more efficient production job at the lowest possible cost. Conversely, in certain cases, the suppliers can provide specialized information of value to Cadillac personnel.

4. Employes of the Division are selected with the utmost care, and only after the most thorough screening. This careful selection is supplemented with adequate training. In this way, the Division is enabled to operate at peak efficiency but without waste or extravagance.

Since its very beginning, the Purchasing Division at the Tank Plant has held closely to this philosophy—with excellent results.

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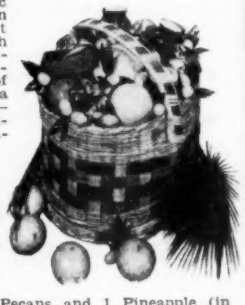
**Your Friends and Employees will appreciate these**

**BASKETS OF SUNSHINE DIRECT FROM OUR FLORIDA GROVES . . .**



This big exotic imported Mexican Hamper just bursting with tree-fresh Tropical Fruits contains 55 lbs. of assorted Florida Citrus Fruits; 3—1 lb. jars of assorted Marmalades and Jellies; 3—1 lb. jars of Fruits-in-Liqueur; a 1 lb. box of Coconut Patties; a brick of Paste Preserves; a 1 lb. jar of Orange Blossom Comb-Honey; 1 jar of Coconutties; 1 bag of Pecans and 1 Pineapple (in season)—all for the low On-the-Tree price of only $14.95 . . . Express prepaid

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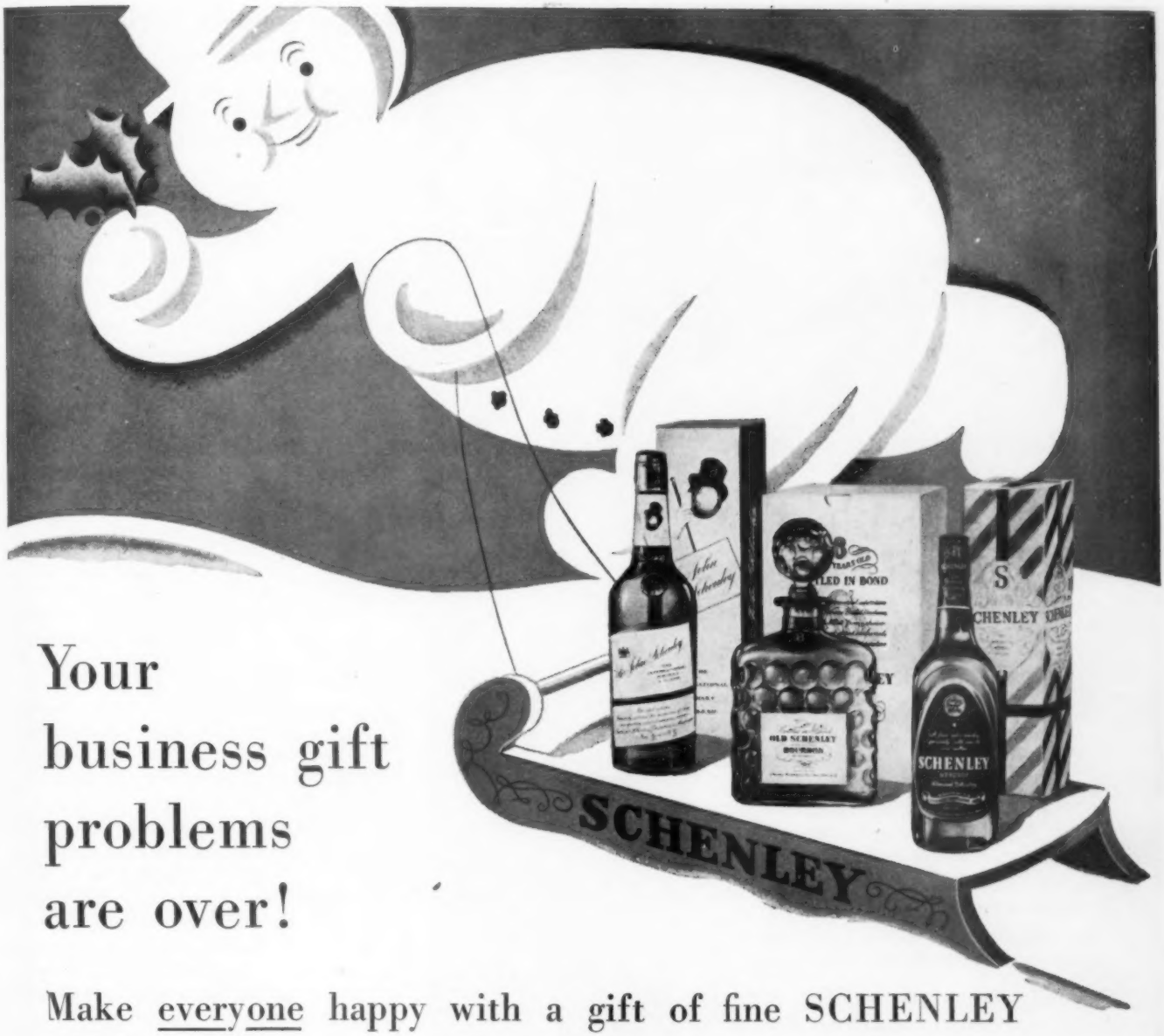
**P.O. Box 667, South Miami, Fla.**

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Nature's unhurried goodness

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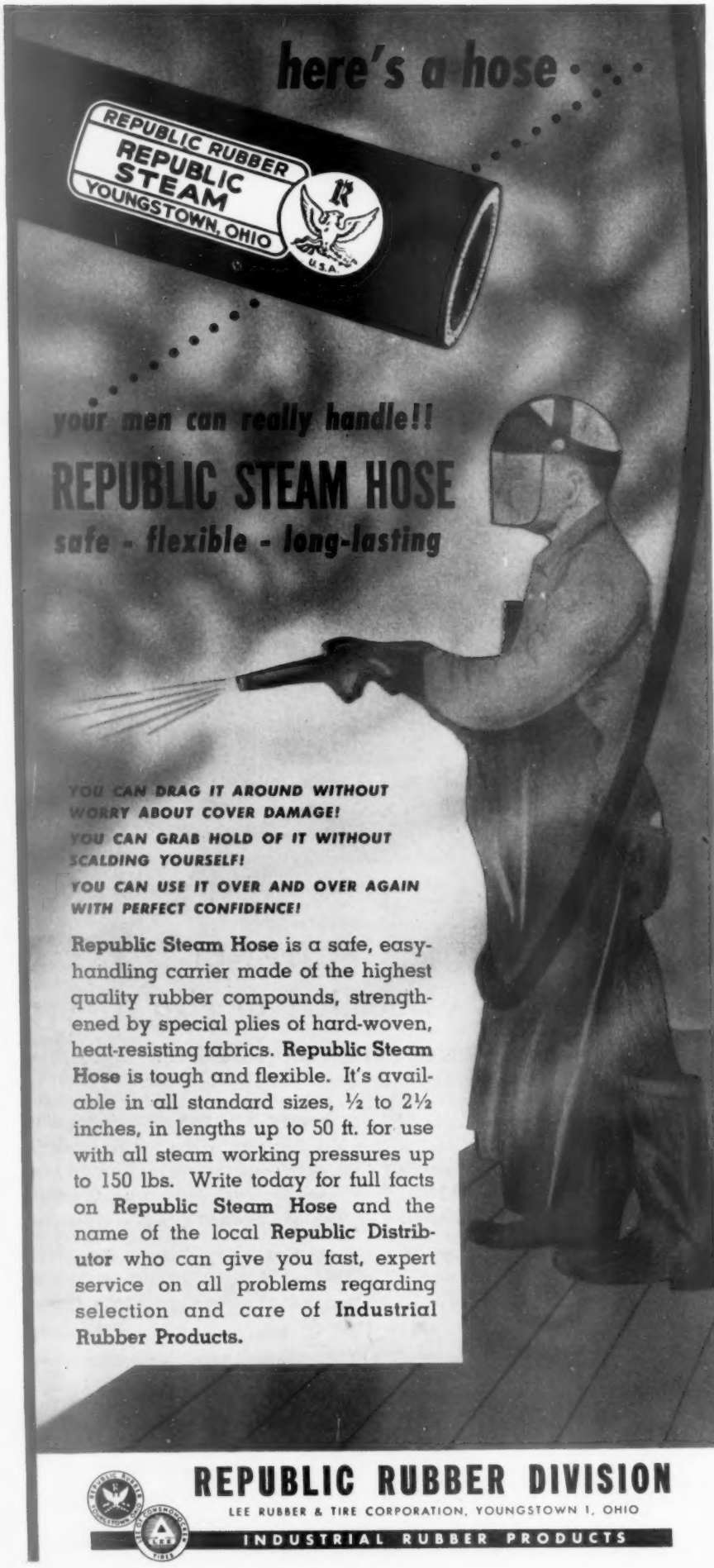
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Republic Steam Hose is a safe, easy-handling carrier made of the highest quality rubber compounds, strengthened by special plies of hard-woven, heat-resisting fabrics. Republic Steam Hose is tough and flexible. It's available in all standard sizes, ½ to 2½ inches, in lengths up to 50 ft. for use with all steam working pressures up to 150 lbs. Write today for full facts on Republic Steam Hose and the name of the local Republic Distributor who can give you fast, expert service on all problems regarding selection and care of Industrial Rubber Products.
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INDUSTRIAL RUBBER PRODUCTS

## Purchasing for Small Business

(*Continued from page* 70)

company will receive a fair share of the available materials, and that in the case of an emergency requirement the company will receive the service that it needs.

Purchasing agents are in a good position, with their large variety of contacts, to work for improved public relations for their respective companies, through fair dealing, friendliness, and courtesies extended to suppliers and to the public in general. A large proportion of the contacts with the public come through his office, and the company may be judged on how he handles the purchasing activities.

The average manufacturing company's expenditures for raw materials, supplies, semi-fabricated parts, and equipment, will aggregate about 50% of the company's dollar expenditures. This reflects the load carried on the purchasing agent's shoulders. The success or failure of a company is, to a great extent, a result of purchasing technique and experience, and competence in carrying out the responsibilities and activities of the purchasing department.

Management, though slow in coming to acknowledge the importance of the purchasing department, now realizes the importance and value of this work. Many companies now have their purchasing agents report directly to the president, thus attesting to the increased confidence being placed in this profession by management.

✦ ✦ ✦

## Warring on Waste in War Procurement

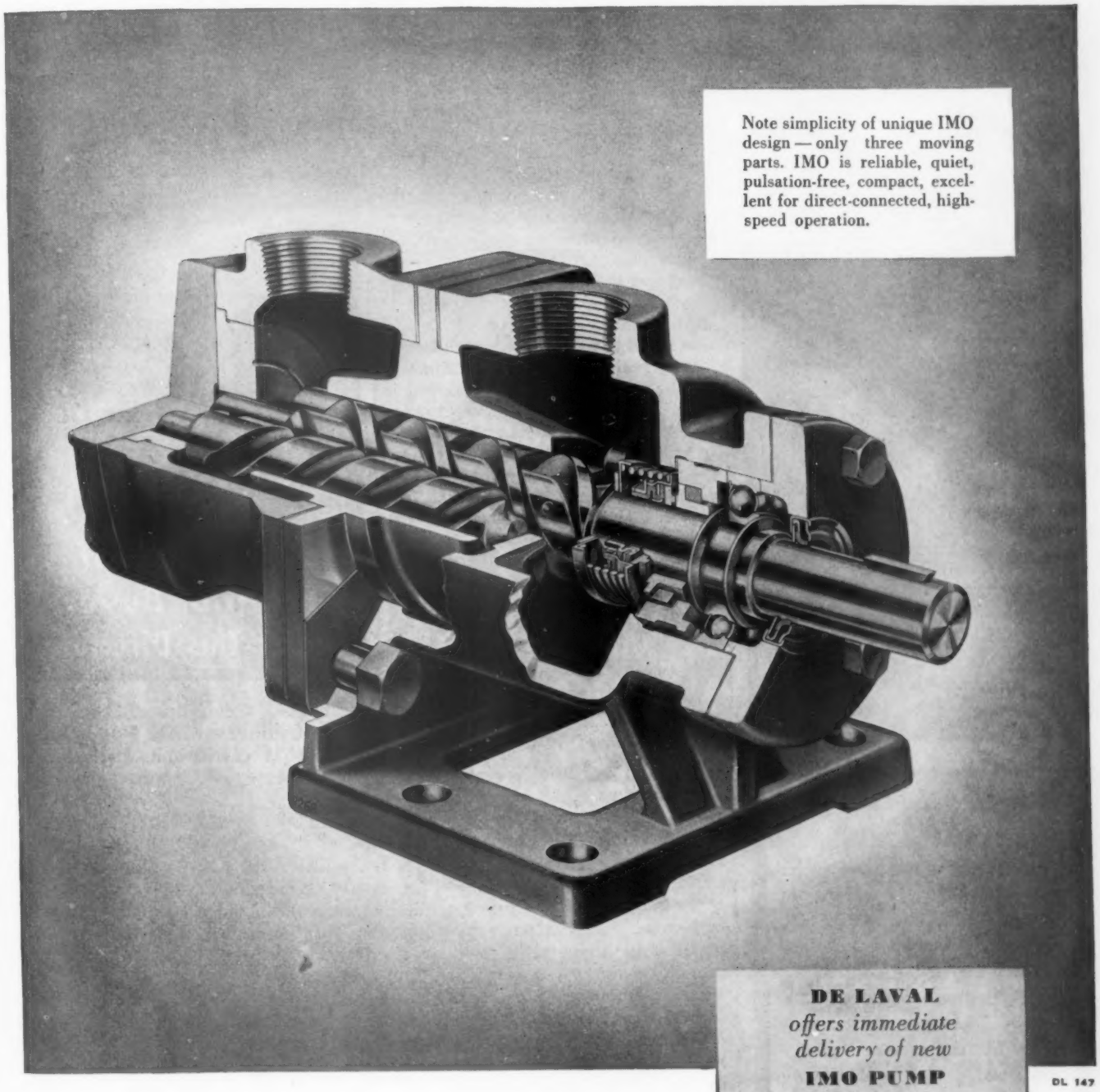
(*Continued from page* 124)

trol point should be maintained. Under current practice, the various departments of the Army may each have a supply point and inventory control of lumber; under the new directive, only one supply and inventory control may be maintained for all the departments of the Army.

At some point in the development of such a program, this might conceivably be extended so that there would be only one supply and inventory control level for all the military services; but for the present, the consolidation of supply and

(*Please turn to page* 364)

# *Newest IMO pump – Greatest savings*


Note simplicity of unique IMO design — only three moving parts. IMO is reliable, quiet, pulsation-free, compact, excellent for direct-connected, high-speed operation.
DE LAVAL
*offers immediate delivery of new*
IMO PUMP
*Write today*
DL 147

This newest De Laval IMO pump — Model A313B — can be used profitably on a wide variety of hydraulic applications for higher pressures. Quantity-produced to help trim your costs, the new IMO saves you up to 40% in initial cost over other IMO models for pressures up to 275 psi. In addition, this quality-designed rotary positive displacement pump gives you all the low-maintenance advantages of the famous IMO pumping principle.

Put the new De Laval IMO A313B pump to work handling light or viscous fluids in hydraulic systems, rotary and steam atomizing oil burners, lubrication, governing systems and similar services. Specify it for capacities to 80 gpm, pressures to 275 psi and intermittent pressures to 325 psi.

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Name _____
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## Warring on Waste in War Procurement

(*Continued from page 362*)

inventory functions is being applied only within a military service.

In cataloging and standardization, the Department of Defense directive requires that all supply items in the three military services be described, identified, classified and numbered in a uniform method.

As is readily apparent, all the stated objectives of the Department of Defense directive fall under the broad category of improved practices and techniques of supply management. Unofficial appraisal suggests that the program will be well under way within 18 months.

The real test of the program will be the accomplishments achieved in time. Whether the drive toward professional standards and practices in procurement and supply management will be achieved within a reasonable time, or whether the services will drag their feet, can only be answered in time. From the standpoint of industrial PA's, the injection of professional concepts in military buying is long overdue.

* * *

## Keep the Law on Your Side

(*Continued from page 132*)

invalid (1) if the invention was previously patented or described in a magazine, newspaper, or other publication in this country or the whole world; (2) if the invention is a mere result: (3) or, a property of matter; (4) or, an aggregation or assembly of old parts which do not act simultaneously together to produce a *unitary* result; (5) or, a mere system or plan for doing something; (6) or, a device invented by mere "mechanical skill" and which could have been "invented" by the average good mechanic; (7) or, a device that is unlawful, inoperative or impractical; (8) or, a scientific principle although it produces a new and desirable advantage; (9) or, it is not new or useful; (10) or a mere idea without operative means or mechanism to put it into practical usage. See La Lande, 175 Fed. (2d) 471.

### *Scientific Principle*

The higher courts uphold the law that a valid patent cannot be obtained on an invention arising from scientific data or facts.

(*Please turn to page 366*)


Complete Information for the INDUSTRIAL BUYER

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With only the industrial buyer in mind, CONOVER-MAST PURCHASING DIRECTORY carries only listings and product facts on the equipment, parts, supplies, and materials needed by industry. Rigidly excluding all nonindustrial listings and advertisements, the Directory is kept compact—it is easy to keep handy and use, yet it is complete. Besides, it has 35 pages of useful information and tables for the buyer which he will not find in other directories.

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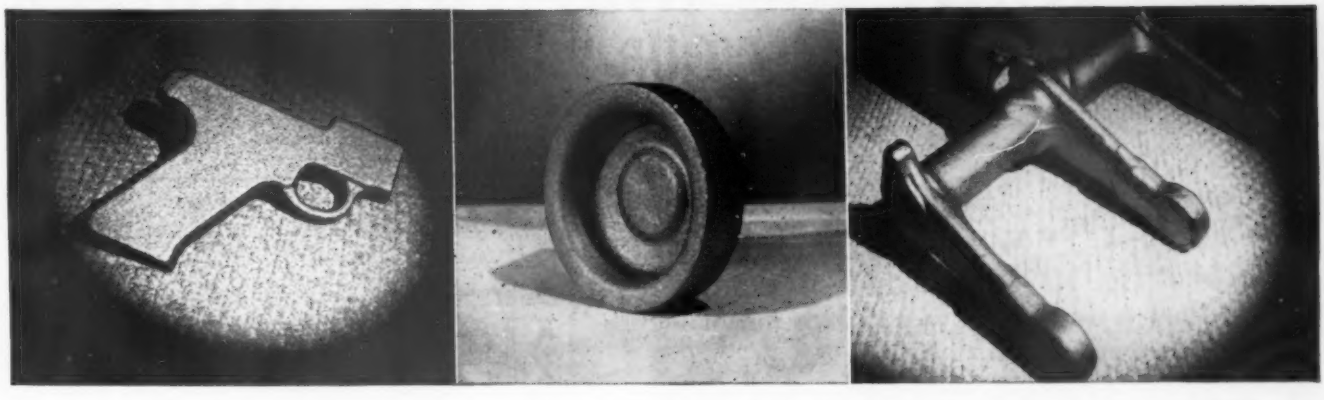
*Jot it down*

# BETHLEHEM *for* DROP FORGINGS



Our regular customers know we make drop forgings—good ones. But maybe you're with a company that hasn't yet tried our services. If so, jot us down on your "Where to Buy" list. We'd like to do business with you.

Bethlehem has much to offer. The necessary steel; a fine, well-equipped die shop; hammers, mechanical presses; heat-treating equipment; full metallurgical service to double-check quality.

We're an experienced firm; been making closed-die forgings for many years. These have included a wide range of designs for the oil, mining, aviation, automotive, electrical, and other types of industries. Call or write us, won't you? We'll bend over backward to meet your requirements and do a good job for you.

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On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

BETHLEHEM STEEL

## Keep the Law on Your Side

(*Continued from page* 364)

For illustration, in the late and leading case of Davison Chemical Corporation v. Joliet Chemicals, Inc., 179 Fed. (2d) 793, the testimony showed facts, as follows: Silica gel is hard, transparent substance with ultra-microscopic pores, possessing ability to absorb moisture from the air, making it useful as a desiccant. It has other commercial uses where absorptive purposes are desired and where catalysts are useful. Some commercial uses necessitate very small pores in the physical structure while for certain others larger pores are desirable. All this was common knowledge when one Connolly applied for a patent.

The industry was then manufacturing silica gel by mixing sodium silicate with an acid under violent agitation, allowing the resulting product to set, breaking it into small pieces, washing it free from acid and salt and drying it at a fixed temperature. Connolly discovered for the first time that a definite relationship exists between the temperature of the wash water and the porosity of the final product. He found that the higher the temperature, the lower the density. He obtained a patent on this invention.

The higher court held the patent invalid as involving merely a "scientific fact". The court said:

"It is one thing of course to discover a scientific fact, a law existing in nature, and quite another to invent a means of making that discovery useful. . . He who discovers a hitherto unknown scientific fact or law of nature has no claim to a monopoly of it. . ."

## APPLICATION FORM FOR SPECIAL PRIORITIES ASSISTANCE

A new application form designed to aid business and Government in obtaining special priorities assistance needed to expedite production has been issued by the National Production Authority, Department of Commerce.

The new form, NPAF-138 Revised, is entitled "Request for Priorities Assistance" and copies of it may be obtained at Department of Commerce offices or from NPA in Washington.

To obtain special priorities aid, applicants must clearly demonstrate that the assistance is needed for the manufacture of a product or the rendering of a service essential to (a) a military or Atomic Energy Commission contract or program, or (b) to prevent serious delay in the completion of an important industrial, public utility or construction program, or (c) to carry out a program or activity essential to the health, safety or welfare of the community, or (d) to overcome an unreasonable exceptional and proved hardship.

The effect of the action, NPA said, is to make available, for the first time, a standard form on which an individual, firm, institution or unit of Government may apply for priorities assistance to meet a special situation in which there is urgent need for delivery of material or equipment at a date earlier than is possible under normal delivery schedules.

The action also is expected to fill a long-felt need on the part of both business and Government for a public-use form which will indicate and provide the type of information required by NPA to enable the Agency to take action on requests for assistance.

Although the form is not complicated, applicants should take the precaution of carefully reading instructions on the back of the application before attempting to fill it in, NPA emphasized.

Requests for priorities assistance must be mailed to NPA or to one of the Claimant Agencies listed on the back of the form. The Claimant Agency will, in turn, forward the request to NPA with its recommendations, thereby facilitating NPA's determination of the appropriate action to be taken.

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| X | **MEDFORD, MASS.:** Mystic Waste Co., 30 Ship Ave. (55) |
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| X | **NEW YORK, N. Y.:** Sterilized Wiping Cloth, Inc., 1281 Viele Ave. (59) |
| X | **OMAHA, NEB.:** Peerless Wiping Cloth Co., 6th & Pacific Sts. (8) |
| X | **PHILADELPHIA, PA.:** The J. Milton Hagy Waste Works, 4946-50 Parkside Ave. (31) Keystone Wiper and Supply Co., 1308 No. 3rd St. (22) |
| X | **PITTSBURGH, PA.:** Armstrong Sanitary Wipers Co., 1233 Spring Garden Ave., N.S. (12) Scheinman-Neaman Co., 1024 Vickroy St. (19) |
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Various industries, have found polyethylene plastic pipe a means for reducing installation costs, and the solution to various operational problems. These include natural gas and electric power transmission, sluice and coal mining, building construction, chemical and allied industries.

Tough, durable yet extremely light in weight, the pipe features outstanding electrical properties needed to insulate power line conduit and raceways; extreme chemical inertness for chemical and food processing applications; corrosion for national gas transmission; rot and rust resistance for building construction, and smoothly extruded surfaces for hydraulic mining and water systems. Since it is flexible, the pipe readily curves to follow uneven surface contours and structural plans. It can also be

bent cold and stapled to building framework.

The upper left photo shows the pipe use in sluice operations in an Arizona mine where gold, silver and lead deposits are pumped through six-inch pipe to recovery equipment. The picture at the top right shows the polyethylene pipe as insulated raceways on pole-top crossarms—it has a dielectric strength of 500 volts per mil and withstands breakdown tests by power companies at more than 20,000 volts. The lower left view shows the pipe in use in a chemical plant, because of its resistance to acids, alkalis and most chemicals where process temperatures do not exceed 140 degrees Fahrenheit. The picture at the lower right shows the pipe installed in a coal mine tunnel. The highly corrosive atmosphere has little effect on it.

The polyethylene pipe resists electrolytic soil corrosion and remains flexible at temperatures down to minus 40 degrees Fahrenheit. The internal surfaces of the extruded pipe are smooth, provide good flow, discourage sediment, and resist metallic abrasion.

*Views by Courtesy of Bakelite Company*

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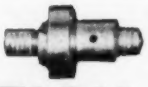

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will be received by Superintendent of Storehouses, Panama Canal Company, Balboa, C. Z., until 10:30 A.M. November 14th on Circular #24, part I; November 18th on Circular #24, part II, (Refrigeration equipment parts; plumbing supplies); November 21st on Circular #25, part I (Chevrolet parts); November 25th on Circular #25, part II, (Diamond "T", Dodge, Plymouth parts); November 28th on Circular #25, part III (Ford, autocar parts); December 2nd on Circular #25, part IV (Intl. Truck parts, Gar Wood load packing truck parts, carburetors). Blanks and information relative to these offerings may be obtained from Panama Canal Company, 24 State St., New York, N. Y.

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according to our present experience, would have increased their life at least 5 times. We use it now—but it's too late for this scrap."

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# LETTERS . . .

## REQUIRED READING

I have read many articles on purchasing, but the one by Bruce Henderson, appearing in the August issue, impresses me as by far the best I have ever read. Mr. Henderson's clear description of the purchasing agent's position I think is outstanding. It is the type of article that seasoned purchasing agents might do well to review at least once a year. The part beginning with the next-to-last paragraph on page 113 (*"In plain, everyday language, a smart purchasing agent doesn't try to control any decision unless he can be reasonably sure that he can make his decision stand up."*) to the end of the article is of particular value and might very well be included in your next book.

Fred O. Paige, Dir. of Pur.
The Welsbach Corporation
Philadelphia, Pa.

## REPORTS TO MANAGEMENT

We are interested in starting a report to management which would more extensively cover the activities of our Purchasing Department and would bring in such things as reports dealing with actual monetary savings obtained by the department.

Our local plant purchasing deals primarily with obtaining maintenance and operating supplies rather than raw materials. We would appreciate very much, information as to where we could secure actual samples from firms dealing with the same problem and who have found this type of report convenient in focusing more attention on the actual money saving potentiality of the Purchasing Department.

R. E. France, Asst. Works P.A.
Electro Metallurgical Company
Alloy, W. Va.

● Forms for reporting purchase savings are shown in the following articles published in PURCHASING:

"Purchasing Men at Westinghouse Effected Savings of More than $7,500,000 in 1950," June 1951 issue. See page 112.

"Evolution of a Purchase Analysis Program," by C. E. Colvin, Jr. (Ethyl Corp., Baton Rouge, La.) June 1951. See pages 123, 124.

"Heads Up Buying," by J. E. Angel. (W. P. Fuller Co., San Francisco) February 1952 issue. See page 81.

"Cost Reductions Are Important Yardstick of Purchasing Department Efficiency," by C. Warner McVicar. (Rockwell Mfg. Co., Pittsburgh, Pa.) May 1952 issue. See page 98.

See also the article by H. W. Macintosh (L. O. Koven & Bro., Inc., Jersey City, N. J.), June 1950 issue, page 111, which describes the reporting system but does not show form.—Ed.

## OUT OF PRINT

May we have three copies of "Office Reproduction Service", from the March 1941 issue of PURCHASING?

H. C. Korner
H. C. Korner Co.
Reading, Pa.

● Sorry, but our 1941 issues are completely out of print, and there are no reprints of this article available. We are constantly amazed at the long reader life and continuing usefulness of PURCHASING articles, but we hesitate to disseminate "dated" information compiled 11½ years ago. Arrangements have been made to bring the information from this article up to date for publication in an early issue.—Ed.

## . . . SO FULLY PACKED

We have always been attentive readers of PURCHASING, but lately it seems to me that each issue packs an awful lot of information of the type we are interested in.

For instance in your September issue —we're reviewing who should check invoices and the account on page 77 will be used in this discussion.

We have been making visits to other purchasing departments, improving our techniques and reviewing our manual. The article on page 79 fits right in with our program.

Last fall we had a purchasing meeting at the Westchester Country Club, where we put a great deal of emphasis and discussion on developing purchasing personnel, and your article on page 94 is very interesting.

We have also had a program of cost reduction, which was given a great deal of prominence in your May issue.

I could go on and on but I guess I have convinced you that we really read the magazine, and I wanted to compliment you on the fine work you are doing.

R. S. Howland, Dir. of Pur.
The Kendall Company
Walpole, Mass.

## STORES CONTROL

In the November 1949 issue of PURCHASING, a survey appeared covering the organizational setup on the control of stores activities. I have been unable to locate this issue in my files, but as I remember, this survey indicated that the majority of companies were not placing stores control under the Purchasing Department. Is this correct?

J. E. Coleman, Pur. Agt.
Pittsburgh Group Companies
Pittsburgh, Pa.

● The 1949 survey covered 484 representative manufacturing companies. The predominant opinion was shown in favor of having the administration of stores within the jurisdiction of the Purchasing Department. The replies indicated the following:

| | |
|---|---|
| Separate Stores Dept. | 18.2% |
| Purchasing Department | 61.2% |
| Other Departments | 20.6% |

Broken down into major stores classifications, Purchasing Department control was reported as:

| | |
|---|---|
| Raw Materials | 69.2% |
| Fabricated Parts & Components | 54.1% |
| Maintenance & Operating Supp. | 64.5% |

In branch plant operations, Purchasing Department control of stores was reported as:

| | |
|---|---|
| Raw Materials | 55.6% |
| Fabricated Parts & Components | 41.0% |
| Maintenance & Operating Supp. | 30.0% |